FTM-2001 SERVICE MANUAL

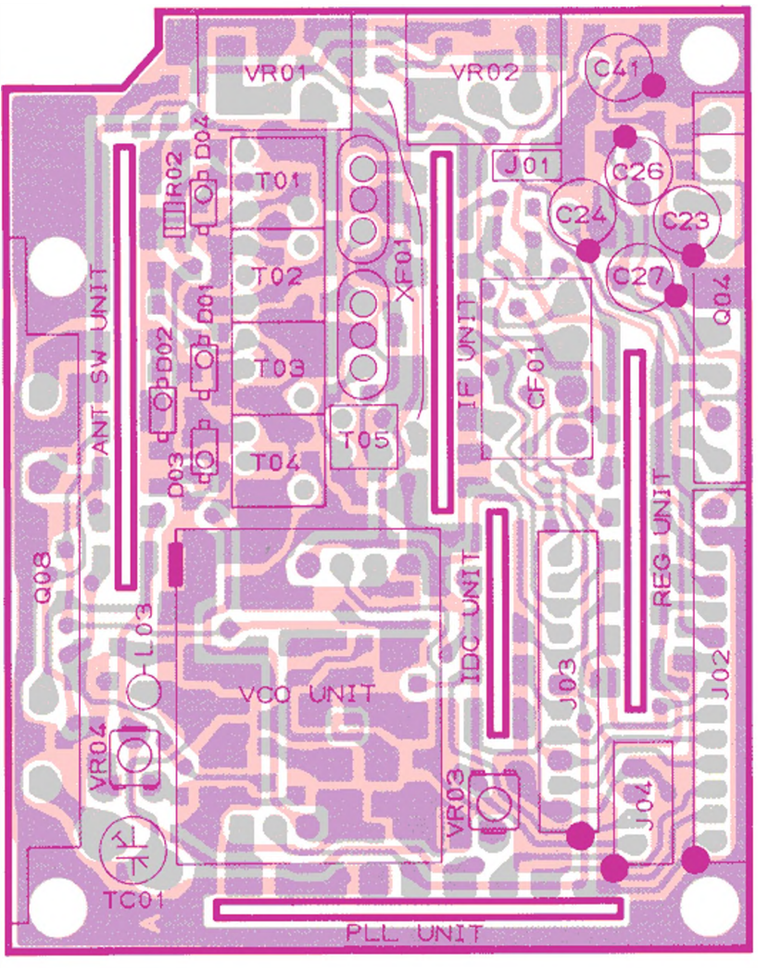
This manual is intended to serve as a supplement to the FTM-2001 Operating Manual. Detailed information regarding functions, specifications, options and operation has been provided in the Operating Manual, and is not reprinted herein. Therefore, this manual is not intended to serve as an independent reference, but to be used in conjunction with the information provided in the Operating Manual.

Because of the compactness and complexity of the double-sided glass-epoxy circuit boards used in the FTM-2001, four layout diagrams are provided for each board. Each side of the board is identified by the type of the majority of components installed on that side. In most cases one side has only chip components, and the other has either a mixture of both chip and lead components (trimmers, coils, electrolytic capacitors, packaged ICs, etc.), or lead components only. The two "obverse" views depict the board as it is seen when viewed directly with the eye, while the two "reverse" views depict the unseen side of the board as it would appear if one were to peer through the board from the other side without seeing the components and tracks on the near side.

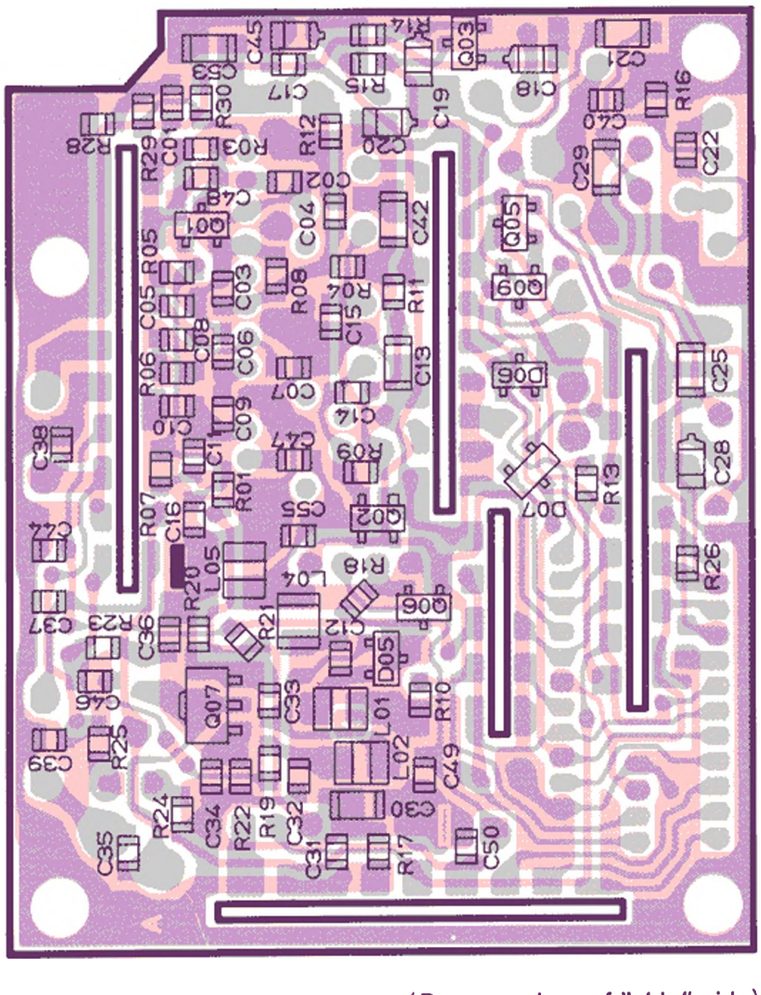
While we believe the technical information in this manual is correct, Yaesu assumes no liability for damage that may occur as a result of typographical or other errors that may be present. Your cooperation in pointing out any inconsistencies in the technical information would be appreciated.

Yaesu Musen reserves the right to make changes in the circuitry of this transceiver, in the interest of technological improvement, without notification of the owners.,

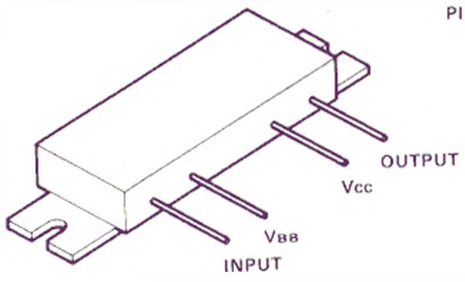
MOTHER BOARD



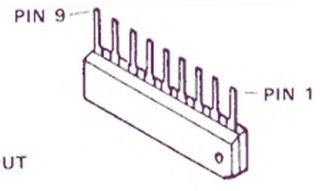
(Obverse view of "component" side)



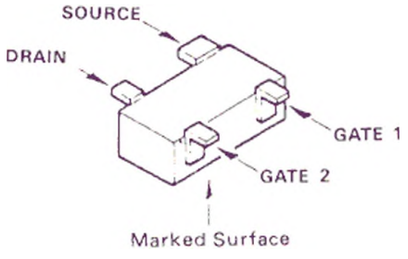
(Reverse view of "chip" side)



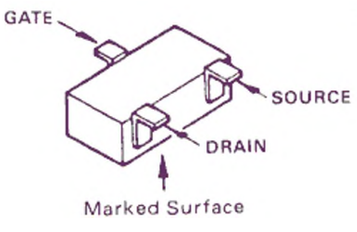
M57796(Q208)



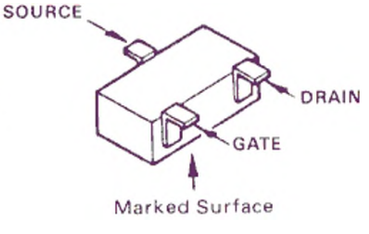
LA4147(Q204)



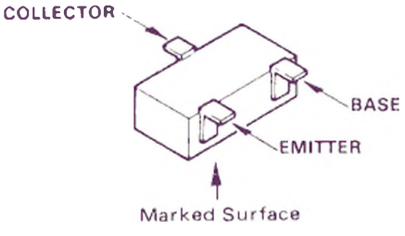
3SK151GR(UH)(Q202)



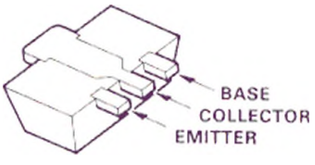
2SK160(K4)(Q203)



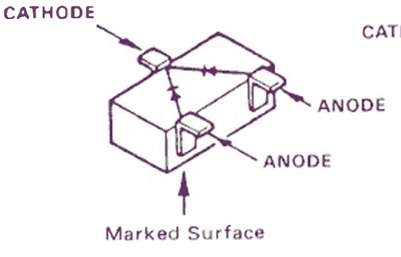
2SK302Y(TY)(Q201)



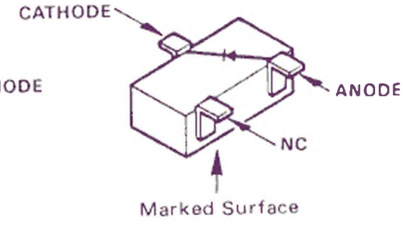
2SC3356(R22)(Q206)
FA1L4M(L31)(Q205,209)



2SC3357(RK)(Q207)

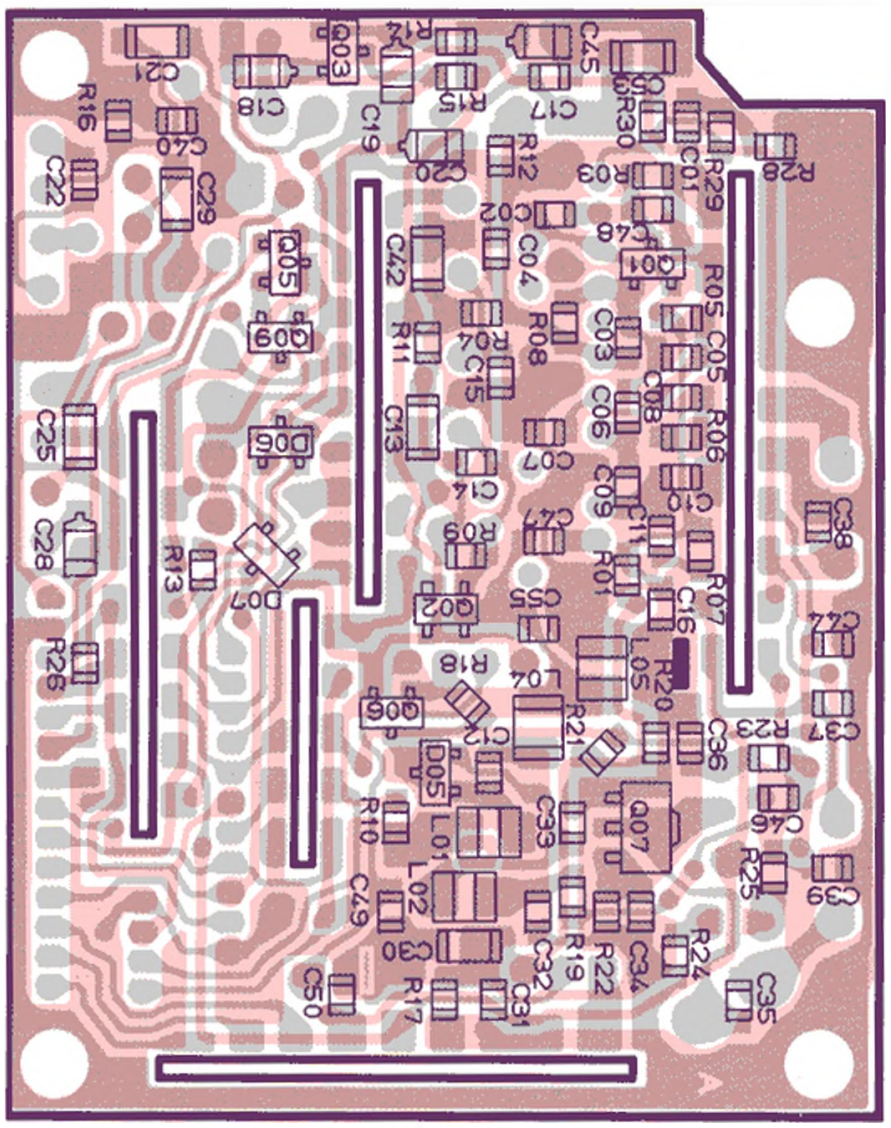


1SS184(B3)(D205,207)

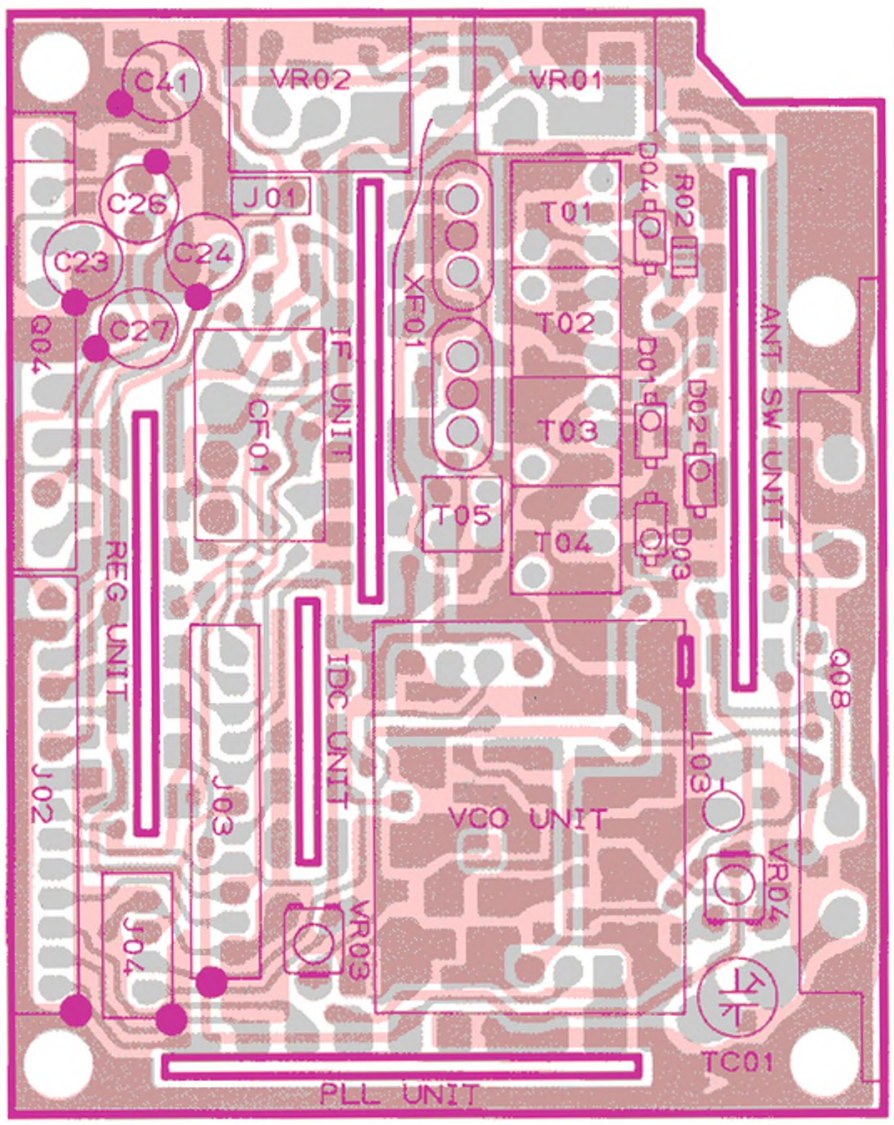


1SS193(F3)(D206)

MOTHER BOARD



(Obverse view of "chip" side)



(Reverse view of "component" side)

MOTHER BOARD VOLTAGE CHART (DC VOLTS)

	1	2	3	4	5	6	7	8	9	REMARKS
Q204	0.7	0	0.6	4.4	0	3.9	7.4	7.4	7.4	RX
Q208	0	0/4.9	12.0	0						RX/TX

	E (S)	C (D)	B (G1)	(G2)	REMARKS
Q201	0.3	4.7	0		
Q202	0	4.1	0	0	
Q203	4.7	4.7	4.7		
Q205	0	4.3/0	0		RX/TX
Q206	0	3.1/7.4	0.7		RX/TX
Q207	0/0.7	0/10.7	0/1.0		RX/TX
Q209	0	0	4.4		

	1 +B	2 Vcc	REMARKS
J201	12.0	12.0	

	1 CLOCK	2 DATA	3 PLL STB	4 BATT	5 MONI	6 MIC IN	7 SCAN	8 TONE STB	9 T SQ	10 TX	11 SAVE	12 CONT 5V	13 GND	14 SP	REMARKS
J202	0	0	0	3.2	0	5.0/2.8	4.3/0	0	4.4	4.4/0	0	5.0	0	0	RX/TX

	1 GND	2 BATT	3 RESET	4 PTT CNTL	5 TONE IN	6 CONT 5V	7 TX 5V	8 DET OUT	9 CALL	10 ALERT TONE	11 ALERT CNTL	REMARKS
J203	0	3.2	0	5.0/2.8	0	5.0/0	0/4.8	1.2/0	0	0	4.7/0	RX/TX

	1 DTMF	2 MUTE	3 CONT 5V	4 GND	REMARKS
J204	0/0.3	0/1.8	5.0	0	RX/TX

	1 TONE	2 CONT 5V	3 TONE STB	4 DATA	5 CLOCK	6 DET OUT	7 T SQ	8 AF IN	9 TX 5V	10 GND	REMARKS
P201	0	5.0	0	0	0	1.2/0	4.4	1.2/0	0/4.8	0	RX/TX

MOTHER BOARD

F2993102 (No.2xx)

Q01 2SK302Y

Q02 3SK151GR

Q03 2SK160K6

Q04 LA4147

Q05 FA1L4M

Q06 2SC3356 -R24

Q07 2SC3357

Q08 M57796H

IF UNIT F2962103A

REG UNIT F2962106A

VCO UNIT F2962105 F2962109

PLL UNIT F2962104

ANT SW UNIT F2962108

IDC UNIT F2962107

CNTL UNIT (F2993101)

CF01 LF-H15S

XF01 21P15BU

D01 1T32

D02 1T32

D03 1T32

D04 1T32

D05 1S3184

D06 1S5193

J1 ANT

J01

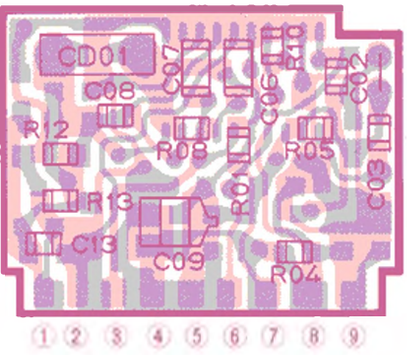
J02

P201

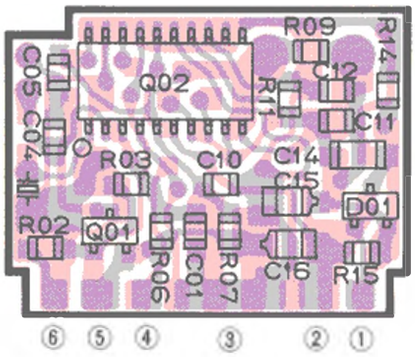
BATT

RESISTER VALUES ARE IN Ω, 1/10W:
CAPACITER VALUES ARE IN μF, 50wv:
UNLESS OTHER WISE NOTED.
(T)CAPACITORS ARE TANTALUM.

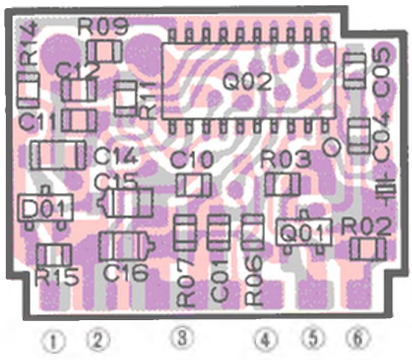
IF UNIT



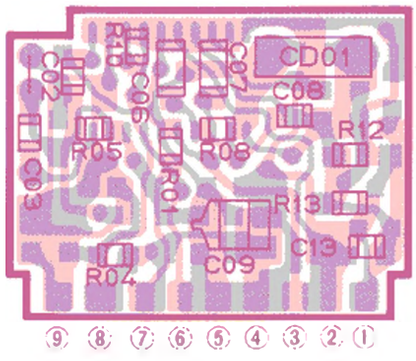
Obverse view of "mixed-component" side



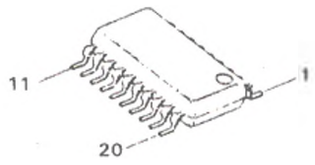
Obverse view of "chip-only" side



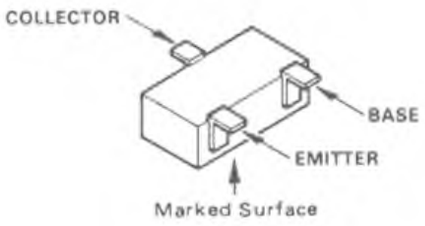
Reverse view of "chip-only" side



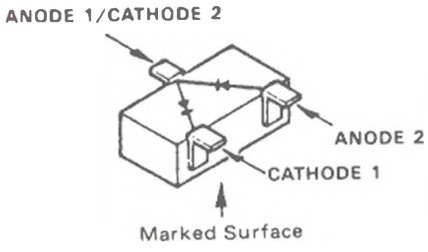
Reverse view of "mixed-component" side



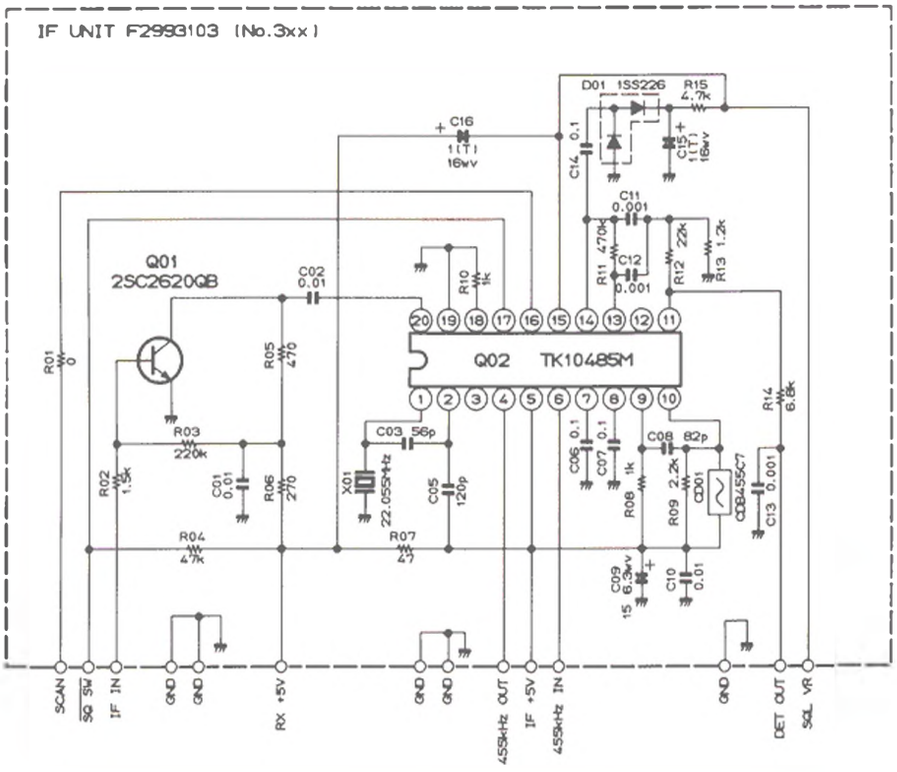
TK10485M(Q302)



2SC2620(QB)(Q301)



1SS226(C3)(D301)

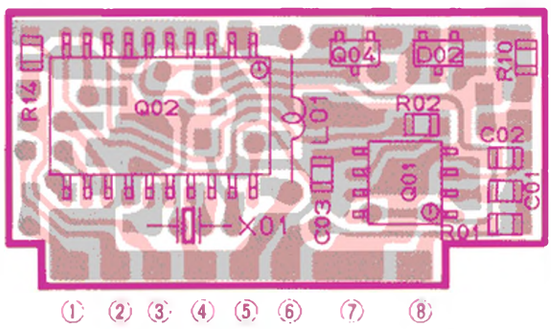


RESISTOR VALUES ARE IN Ω, 1/10W;
CAPACITOR VALUES ARE IN μF, 50wv;
UNLESS OTHERWISE NOTED.
(T)CAPACITORS ARE TANTALUM.

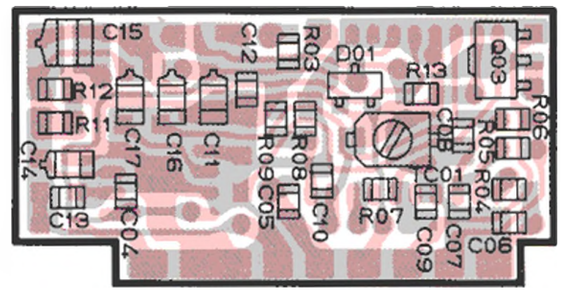
Mixed-Component Side (DC VOLTS)									
1/ DET OUT	2/ GND	3/ 455kHz IN	4/ GND	5/ IF 5V	6/ 455kHz OUT	7/ SCAN	8/ $\overline{\text{SQ SW}}$	9/ GND	REMARKS
1.2/0	0	3.5/0	0	4.4/0	4.1/0	4.2/0	0	0	RX/TX

Chip-Only Side (DC VOLTS)						
1/ GND	2/ SQL	3/ GND	4/ RX 5V	5/ GND	6/ IF IN	REMARKS
0	0	0	4.7/0	0	0.7/0	RX/TX

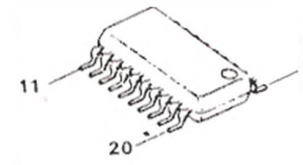
PLL UNIT



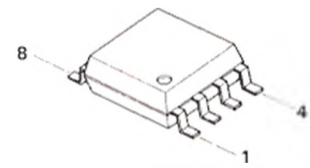
Obverse view of "mixed-component" side



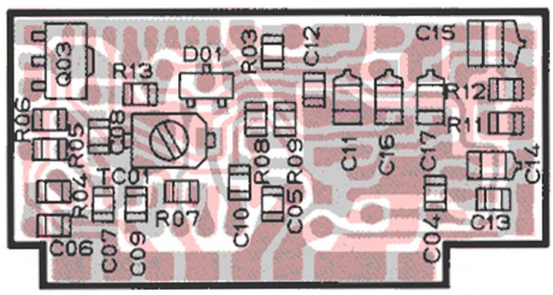
Obverse view of "chip-only" side



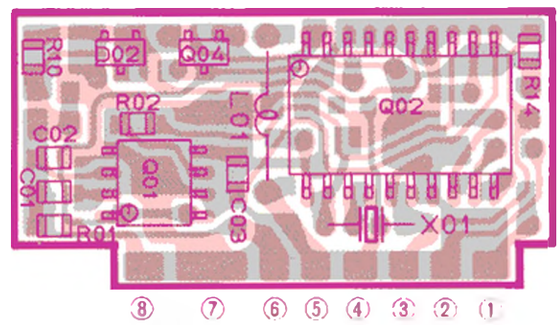
JLC1007P(Q402)



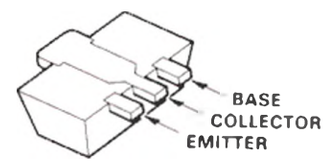
μPB569G(Q401)



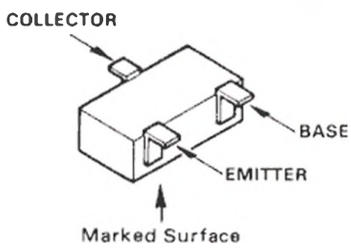
Reverse view of "chip-only" side



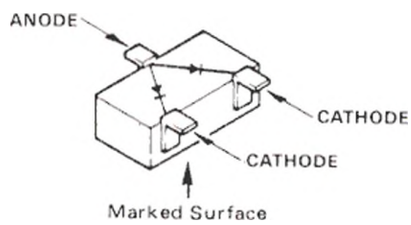
Reverse view of "mixed-component" side



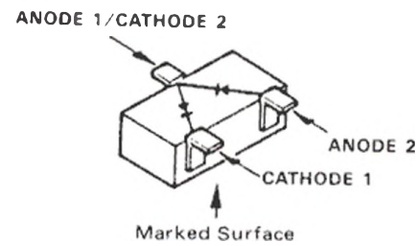
2SD1699(TR)(Q403)



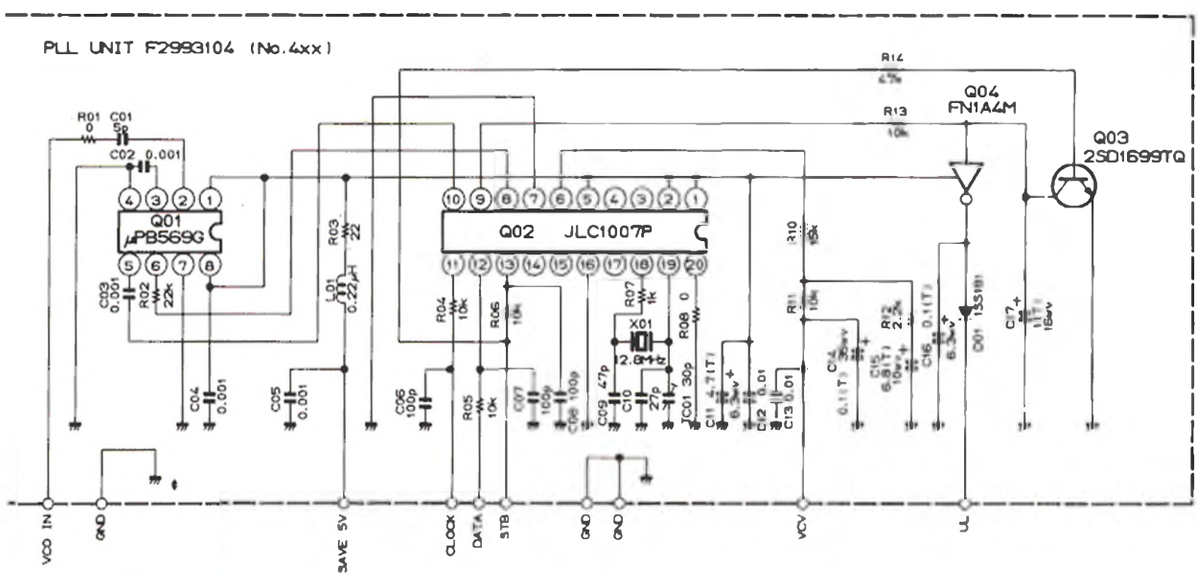
FN1L4M(M31)(Q404)



1SS181(A3)(D401)



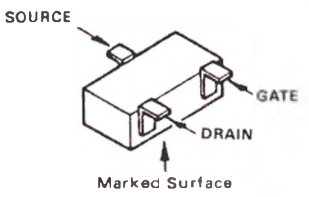
1SS226(C3)(D402)



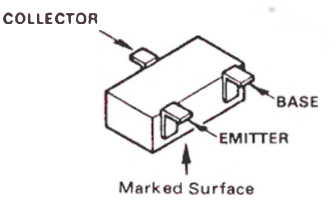
RESISTOR VALUES ARE IN Ω, 1/10W;
CAPACITOR VALUES ARE IN μF, 50WV;
UNLESS OTHERWISE NOTED
(T)CAPACITORS ARE TANTALUM

Mixed-Component Side (DC VOLTS)								
1 CLOCK	2 DATA	3 STB	4 UL	5 SAVE 5V	6 VCV	7 GND	8 VCO IN	REMARKS
0	0	0	0/1.3	4.8	1.0~4.0	0	1.9	RX/TX

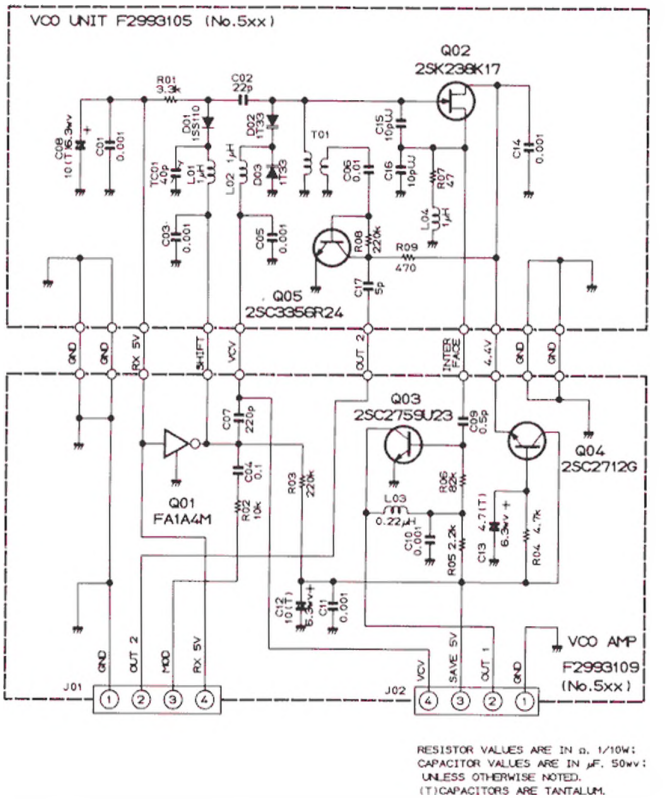
VCO·VCO AMP UNIT



2SK238(K17)(Q501)



2SC2712GR(LG)(Q504)
2SC2759(U23)(Q503)
2SC3356(R24)(Q505)
FA1A4M(L33)(Q501)

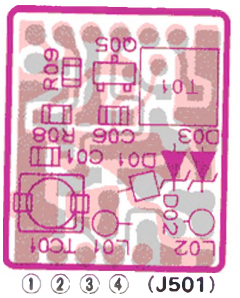


RESISTOR VALUES ARE IN Ω, 1/10W:
CAPACITOR VALUES ARE IN μF, 50wv:
UNLESS OTHERWISE NOTED.
(T)CAPACITORS ARE TANTALUM.

J501 (DC VOLTS)				
1 GND	2 OUT 2	3 MOD	4 RX 5V	REMARKS
0	0.7	0	4.7/0	RX/TX

J502 (DC VOLTS)				
1 GND	2 OUT 1	3 SAVE 5V	4 VCV	REMARKS
0	1.9	4.8	1.0~4.0	

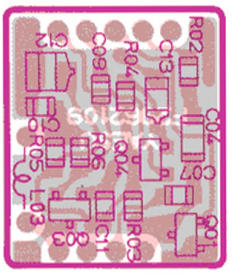
(J502) ④ ③ ② ①



① ② ③ ④ (J501)

(VCO UNIT)

(J502) ④ ③ ② ①

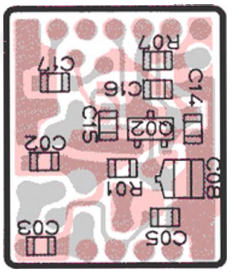


① ② ③ ④ (J501)

(VCO AMP UNIT)

(Obverse view of "top" side)

① ② ③ ④ (J502)



(J501) ④ ③ ② ①

(VCO UNIT)

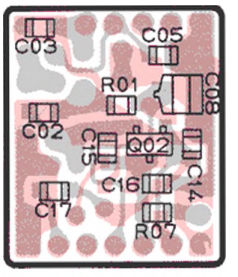
① ② ③ ④ (J502)

(J501) ④ ③ ② ①

(VCO AMP UNIT)

(Obverse view of "bottom" side)

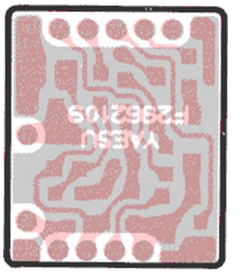
(J502) ④ ③ ② ①



① ② ③ ④ (J501)

(VCO UNIT)

(J502) ④ ③ ② ①

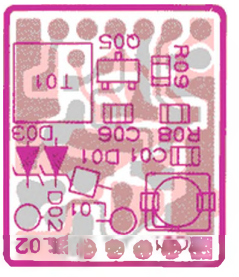


① ② ③ ④ (J501)

(VCO AMP UNIT)

(Reverse view of "bottom" side)

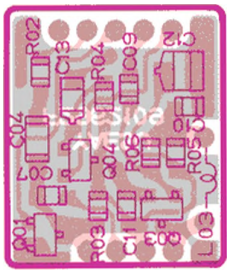
① ② ③ ④ (J502)



(J501) ④ ③ ② ①

(VCO UNIT)

① ② ③ ④ (J502)

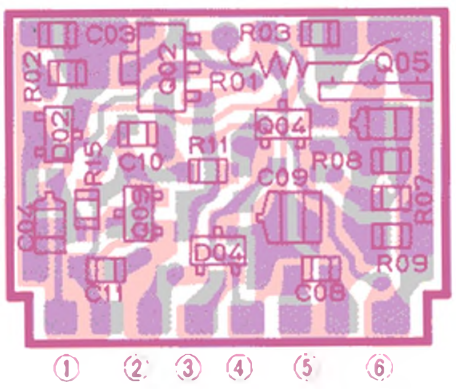


(J501) ④ ③ ② ①

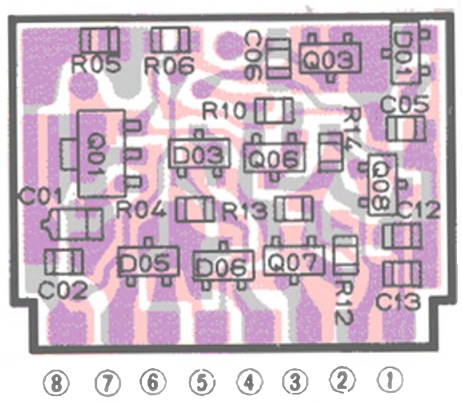
(VCO AMP UNIT)

(Reverse view of "top" side)

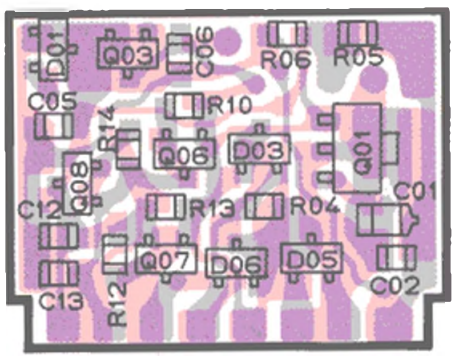
REG UNIT



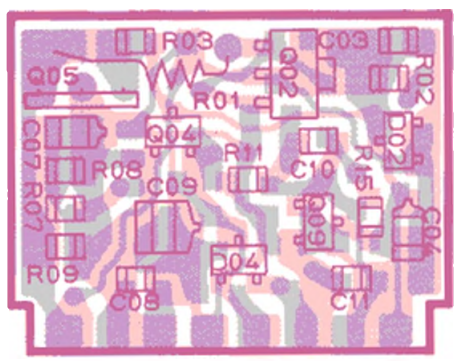
(Obverse view of "mixed-component" side)



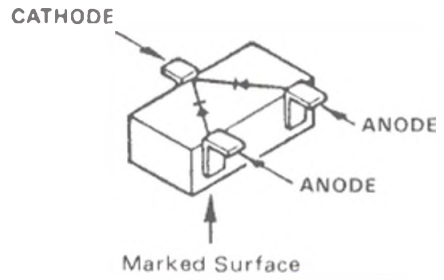
(Obverse view of "chip-only" side)



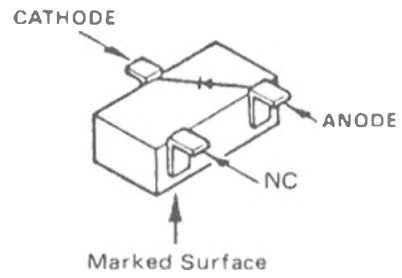
(Reverse view of "chip-only" side)



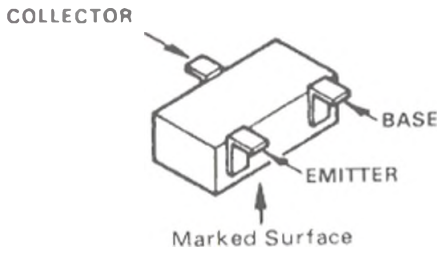
(Reverse view of "mixed-component" side)



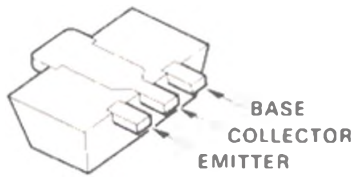
1SS184(B3)(D601,603,604,605,606



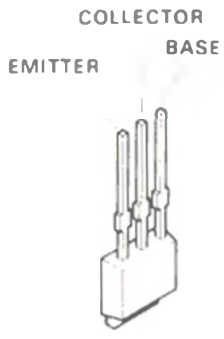
O2CZ8,2X(I5)(D602)



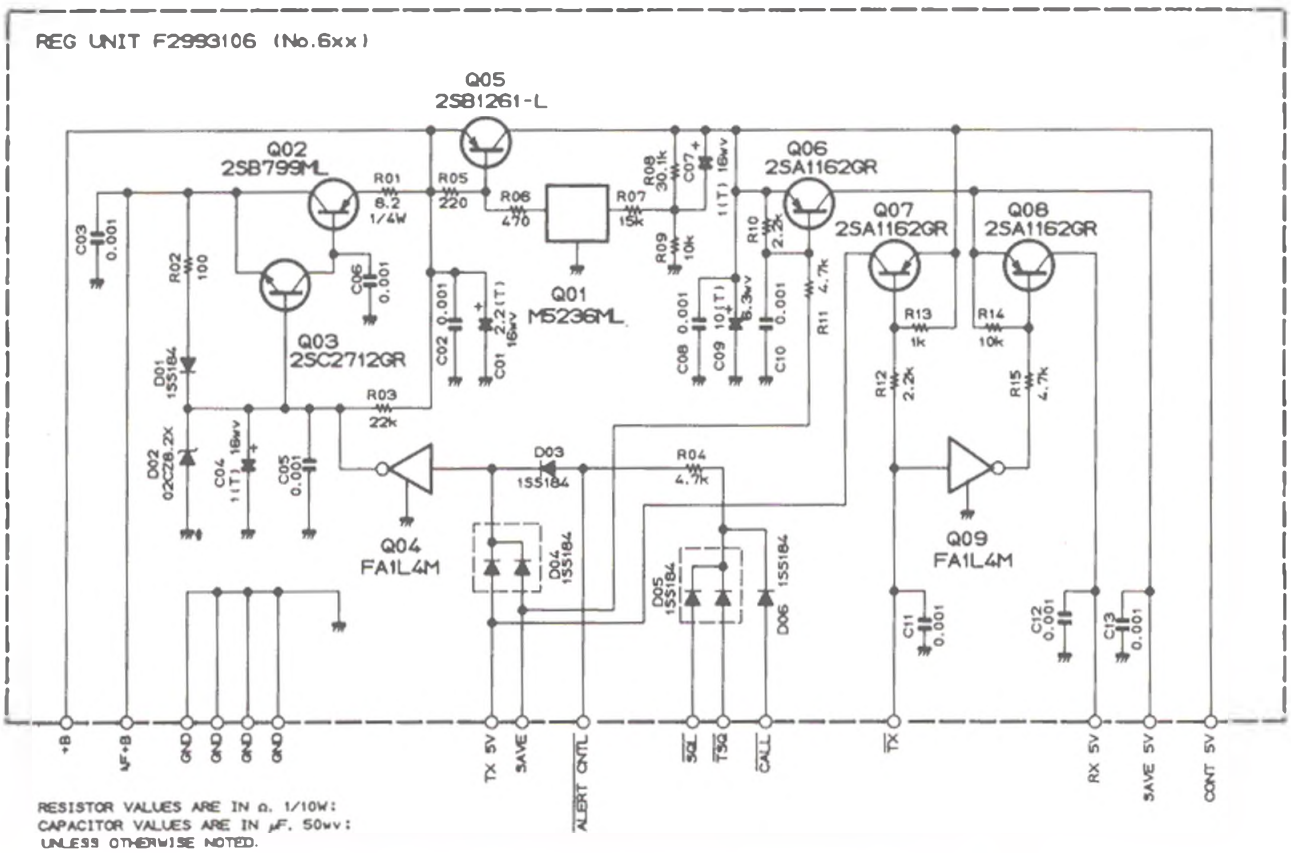
2SA1162GR(SG)
(Q606,607,608)
2SC2712GR(LG)
(Q603)
FA1L4M(L31)
(Q604,609)



2SB799(ML)(Q602)
M5236(ML)(Q601)



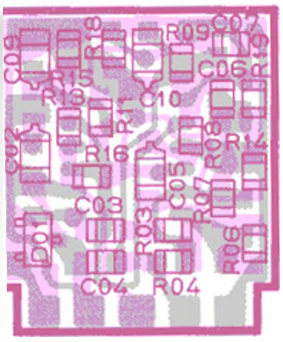
2SB1261(Q605)



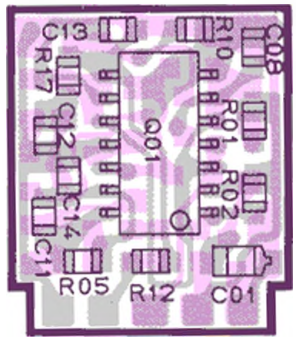
Mixed-Component Side (DC VOLTS)						
1 GND	2 $\overline{TX}$	3 SAVE	4 CONT 5V	5 GND	6 AF + B	REMARKS
0	4.3/0	0	5.0	0	7.6/0	RX/TX

Chip-Only Side (DC VOLTS)								
1 RX 5V	2 SAVE 5V	3 TX 5V	4 $\overline{CALL}$	5 $\overline{ALERT\ CNTL}$	6 $\overline{SQ\ SW}$	7 $\overline{TSQ}$	8 +B	REMARKS
4.7/0	4.8	0/4.8	0	0	0	0	12.0	RX/TX

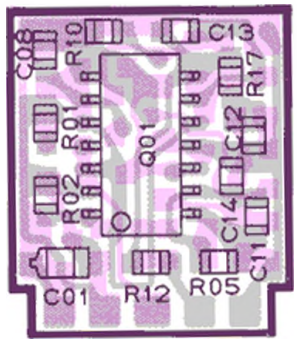
IDC UNIT



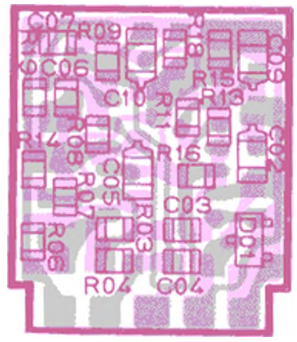
Obverse view of "diode" side



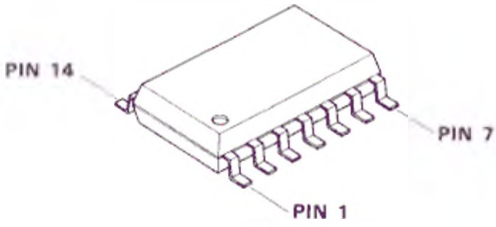
Obverse view of "IC" side



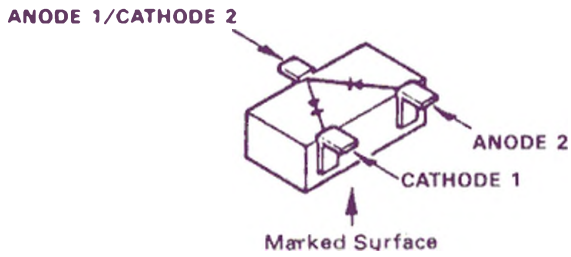
Reverse view of "IC" side



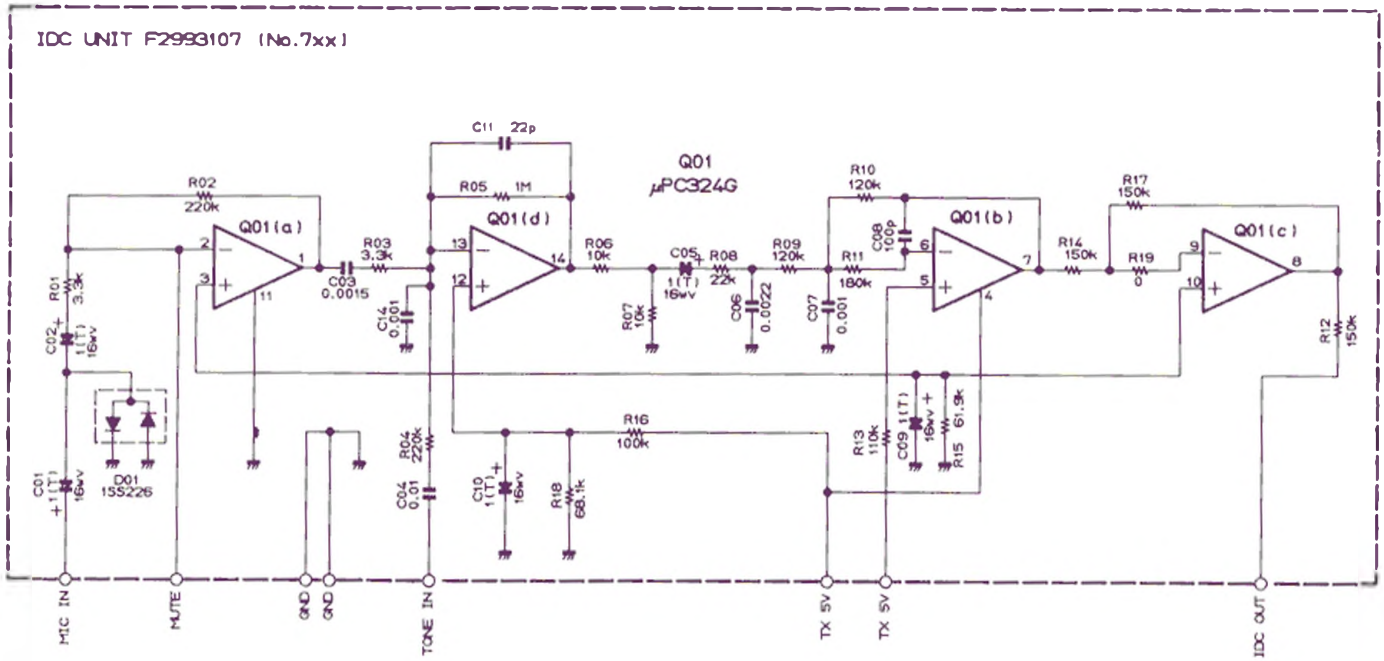
Reverse view of "diode" side



μPC324G(Q701)



1SS226(C3)(D701)

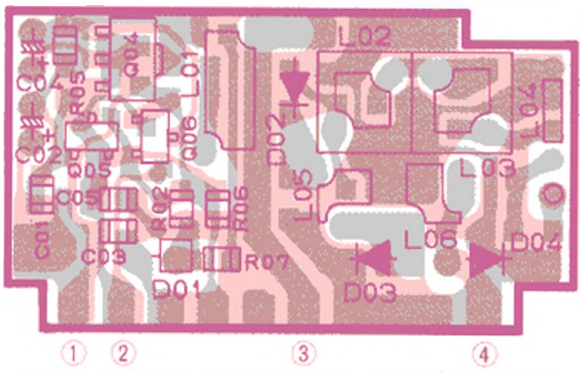


RESISTOR VALUES ARE IN Ω, 1/10W;
CAPACITOR VALUES ARE IN μF, 50wv;
UNLESS OTHERWISE NOTED.
(T)CAPACITORS ARE TANTALUM.

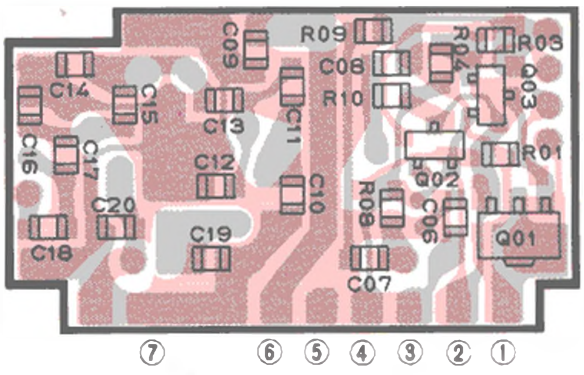
"DIODE" Side (DC VOLTS)			
1/GND	2/TONE IN	3/TX 5V	REMARKS
0	0	0/4.9	RX/TX

"IC" Side (DC VOLTS)					
1/MIC IN	2/MUTE	3/TX 5V	4/MOD OUT	5/GND	REMARKS
5.0/2.8	0/1.8	0/4.9	0/0.3	0	RX/TX

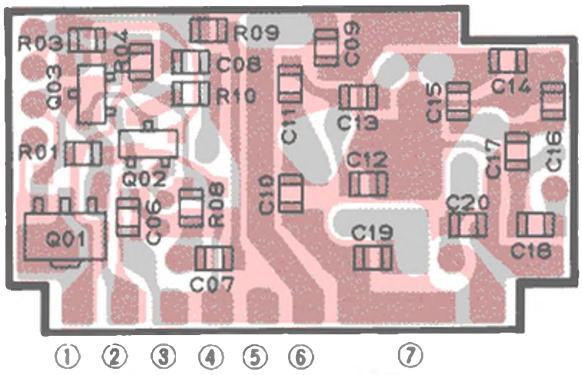
ANT SW UNIT



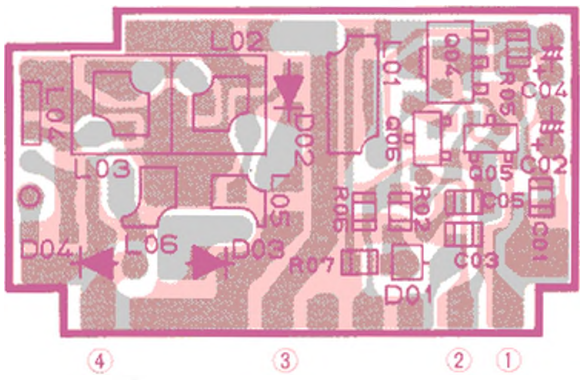
(Obverse view of "mixed-component" side)



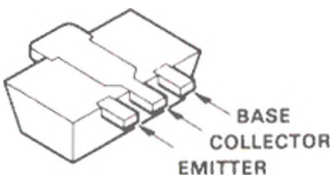
(Obverse view of "chip-only" side)



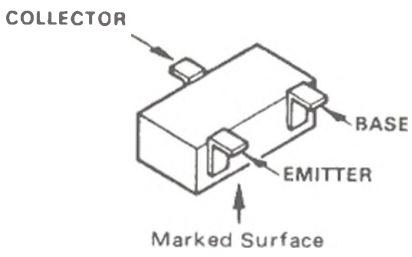
(Reverse view of "chip-only" side)



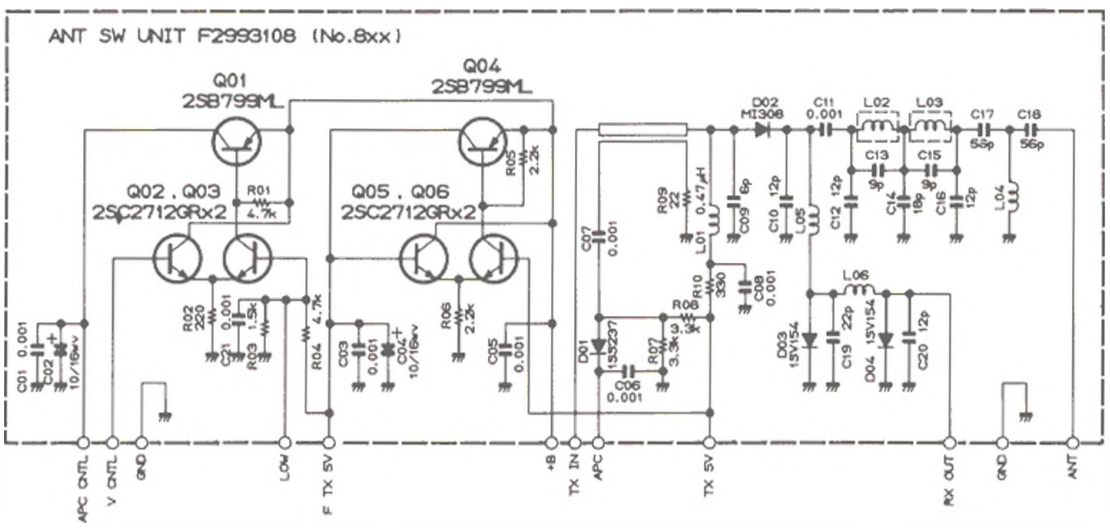
(Reverse view of "mixed-component" side)



2SB799(ML)
(Q801,Q804)



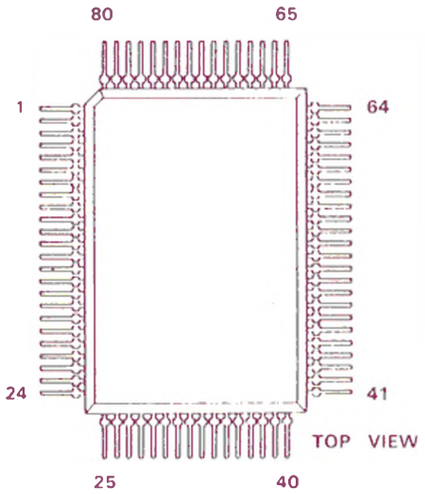
2SC2712GR(LG)
(Q802,803,805,806)



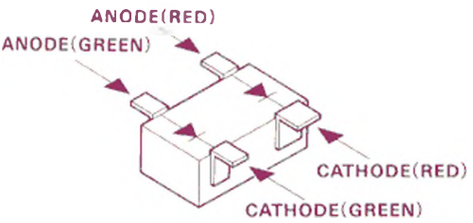
RESISTOR VALUES ARE IN Ω
CAPACITOR VALUES ARE IN
UNLESS OTHERWISE NOTED.

Mixed-Component Side (DC VOLTS)				
1/F. TX 5V	2/V CNTL	3/GND	4/RX OUT	REMARKS
0/5.0	0/1.4	0	0/0.7	RX/TX

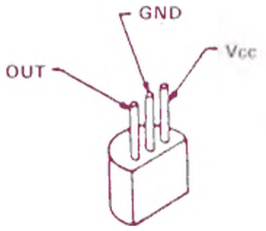
Chip-Only Side (DC VOLTS)							
1/APC CNTL	2/+B	3/APC OUT	4/TX 5V	5/GND	6/TX IN	7/GND	REMARKS
1.5/11.5	12.0	0/2.3	0/4.9	0	0	0	RX/TX



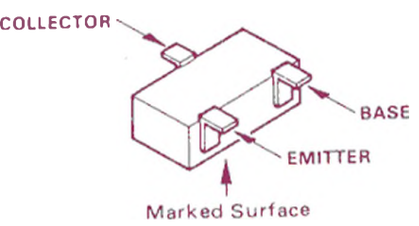
HD404608-A01FS(Q101)



LT1EP53A(D103)

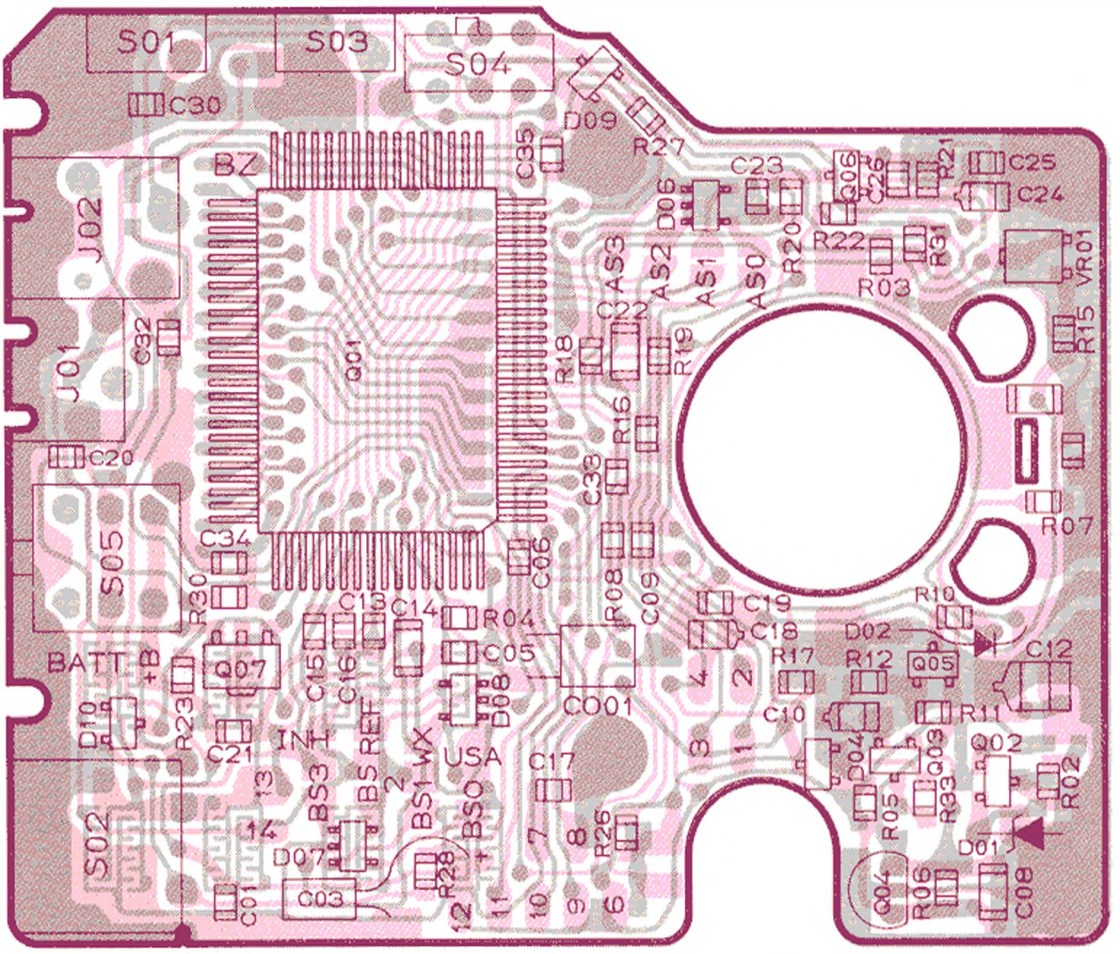


PST523C-2(Q104)

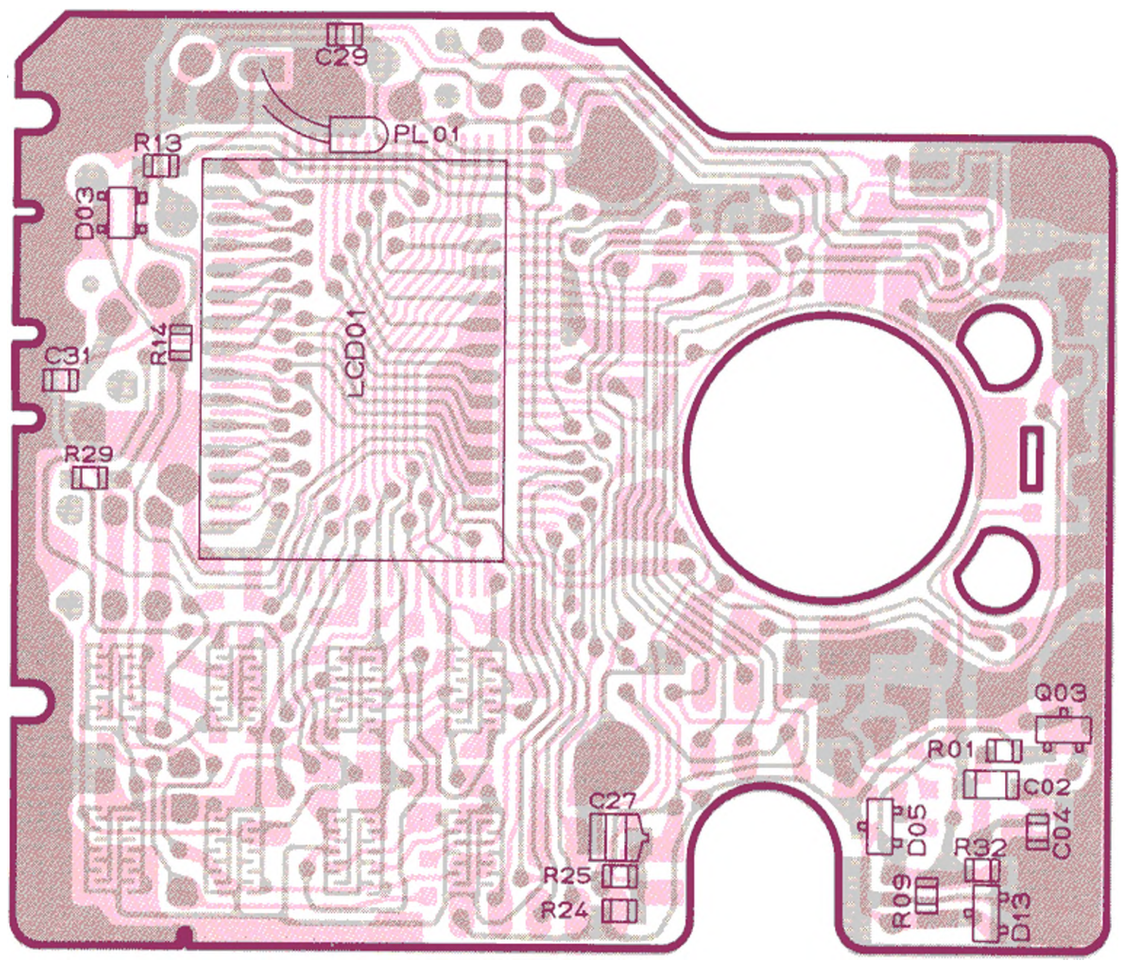


2SA1162GR(SG)(Q103,105,106)
2SC2712GR(LG)(Q102,108)

HC1F3P(CS)(Q107)

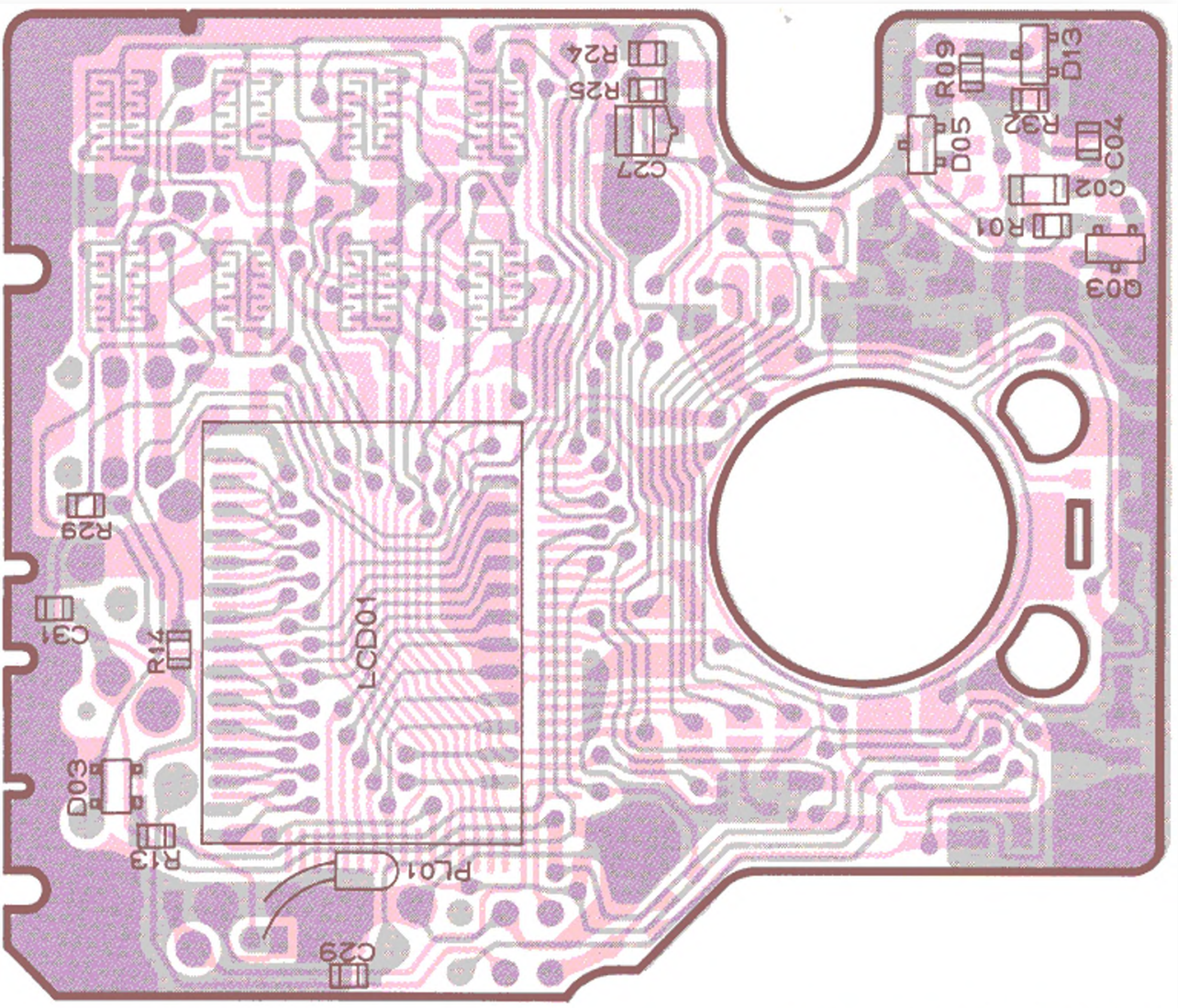


(Obverse view of "IC" side)

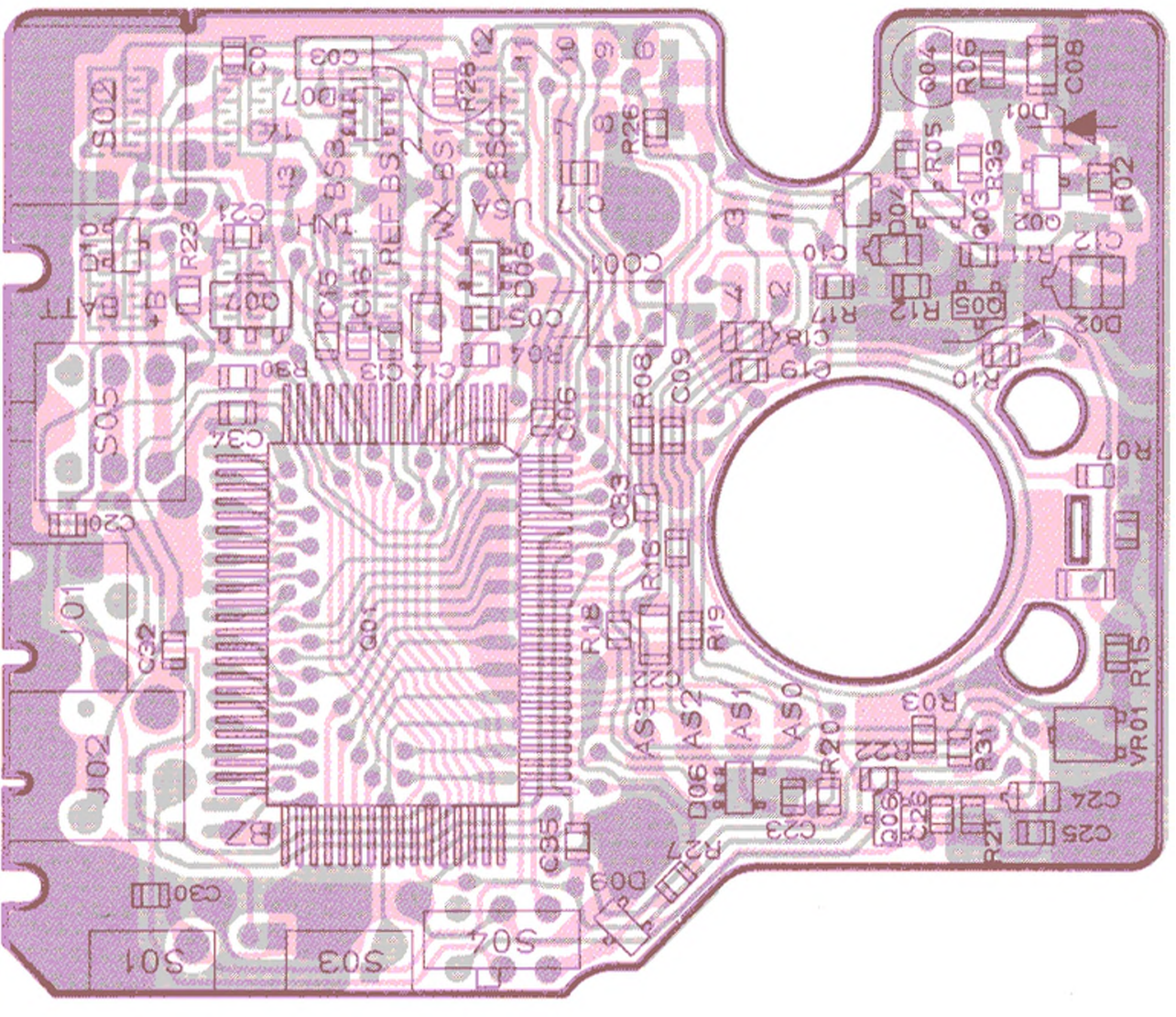


(Reverse view of "LCD" side)

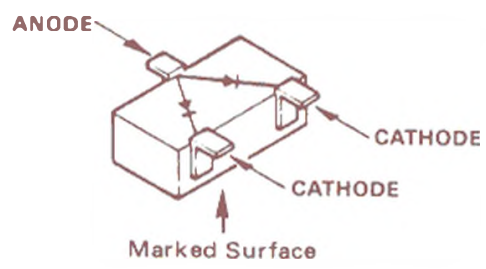
CNTL UNIT



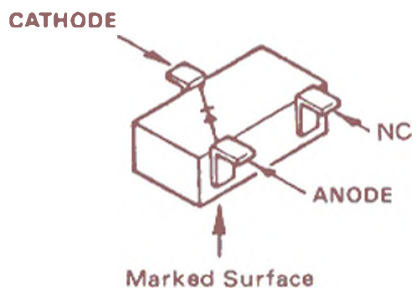
(Obverse view of "LCD" side)



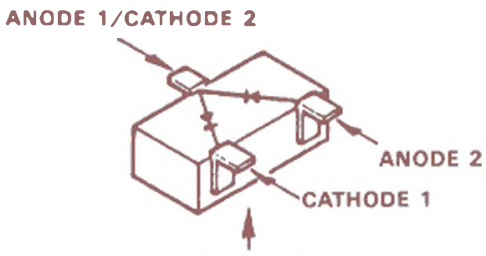
(Reverse view of "IC" side)



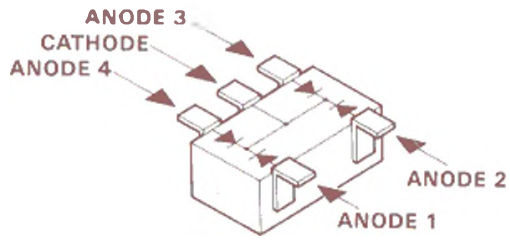
1SS181(A3)(D110)



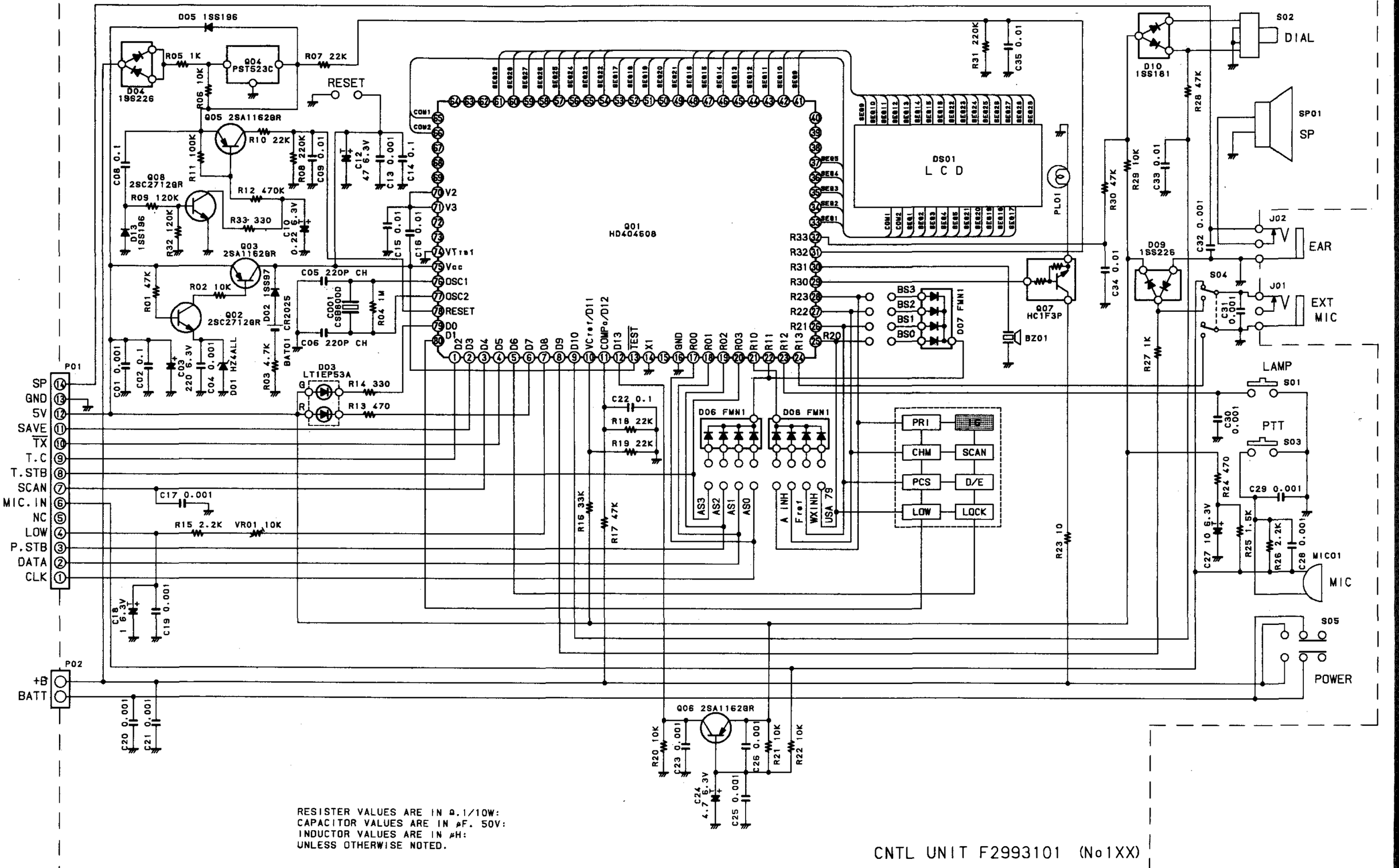
1SS196(G3)(D105,113)



1SS226(C3)(D104,109)



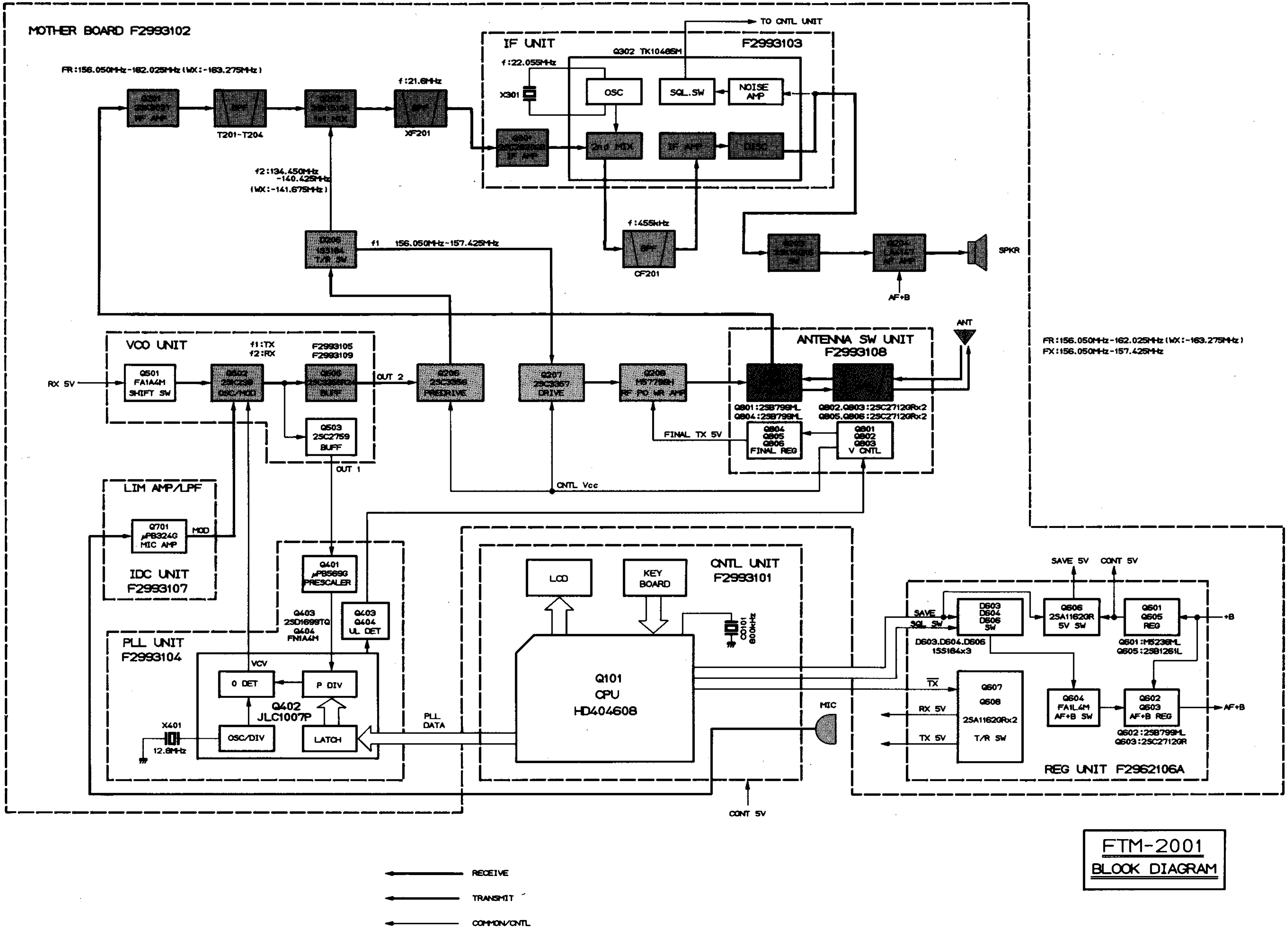
FMN 1(D106,107,108)



RESISTER VALUES ARE IN Ω.1/10W:
CAPACITOR VALUES ARE IN μF. 50V:
INDUCTOR VALUES ARE IN μH:
UNLESS OTHERWISE NOTED.

CNTL UNIT F2993101 (No1XX)

CNTL UNIT


MOTHER BOARD F2993102
FR:156.050MHz-162.025MHz (WX:-163.275MHz)
T201~T204
f:21.6MHz
XF201
f2:134.450MHz
-140.425MHz
(WX:-141.675MHz)
f1 156.050MHz~157.425MHz
TO CNTL UNIT
IF UNIT
F2993103
Q302 TK10486M
f:22.055MHz
X301
OSC
SQL.SW
NOISE AMP
2nd MIX
IF AMP
DISC
f:455kHz
BPF
CF201
SPKR
AF+B
ANT
ANTENNA SW UNIT
F2993108
Q801:2SB799ML
Q804:2SB799ML
Q802.Q803:2SC2712GRx2
Q805.Q806:2SC2712GRx2
Q804
Q805
Q806
FINAL REG
Q801
Q802
Q803
V CNTL
FINAL TX 5V
FR:156.050MHz-162.025MHz (WX:-163.275MHz)
FX:156.050MHz-157.425MHz
VCO UNIT
f1:TX
f2:RX
F2993105
F2993109
RX 5V
Q501
FA1A4M
SHIFT SW
OUT 2
Q503
2SC2759
BUFF
OUT 1
Q206
2SC3356
PREDRIVE
Q207
DRIVE
Q208
CNTL Vcc
LIM AMP/LPF
Q701
μPB324G
MIC AMP
MOD
IDC UNIT
F2993107
Q401
μPB569G
PRESCALER
Q403
2SD1699TQ
Q404
FN1A4M
Q403
Q404
UL DET
PLL UNIT
F2993104
VCV
0 DET
P DIV
Q402
JLC1007P
X401
12.8MHz
OSC/DIV
LATCH
PLL
DATA
CNTL UNIT
F2993101
LCD
KEY
BOARD
CO101
800kHz
Q101
CPU
HD404608
MIC
CONT 5V
SAVE 5V
CONT 5V
SAVE
SQL SW
D603
D604
D606
SW
D603.D604.D606
1SS184x3
Q606
2SA1162GR
5V SW
Q601
Q605
REG
+B
Q601:M5236ML
Q605:2SB1261L
TX
RX 5V
TX 5V
Q607
Q608
2SA1162GRx2
T/R SW
Q604
FA1L4M
AF+B SW
Q602
Q603
AF+B REG
AF+B
Q602:2SB799ML
Q603:2SC2712GR
REG UNIT F2962106A
FTM-2001
BLOOK DIAGRAM
RECEIVE
TRANSMIT
COMMON/CNTL

ALIGNMENT

Alignment Equipment

Frequency counter (±0.1ppm to 200 MHz)

DC voltmeter (10-Megohm input impedance)

AF millivoltmeter

DC ammeter ranging to 2A

RF in-line wattmeter (±5% accuracy to 200 MHz)

50-Ohm resistive dummy load (10W at 200 MHz)

RF signal generator (up to 200 MHz, with calibrated output levels from 5dBu to 100dBu)

AF signal generator (with calibrated output levels from 1mV to 25mV)

AF amplifier and Loudspeaker

Phon meter

RF sampling coupler "T"

Deviation meter

External loudspeaker (8-ohm, 1W), or load resistor

Regulated DC power supply, 12V @ 2A

Alignment Precautions

Correct alignment requires that the ambient temperature be the same as that of the transceiver and test equipment, and that this temperature be held constant between 20 and 30 °C (68 to 86 °F). When the transceiver is brought into the shop from hot or cold air, it should be allowed some time for thermal equalization before alignment.

Alignments must only be made with oscillator shields and circuit boards firmly affixed in place. Also, the test equipment must be thoroughly warmed up before beginning.

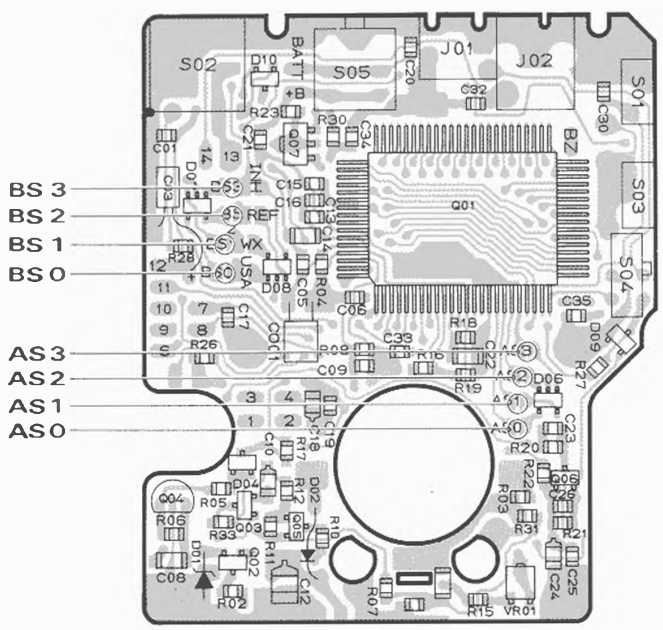
Alignment values assume a DC supply voltage of 12.0V.

Note: Signal levels in dB referred to in the alignment procedure are based on 0dBu = 0.5uV.

Alignment Channel Frequencies

Before beginning alignment, write down the AS and BS solder bridge jumper settings on the Control Unit, and then remove the jumpers (this selects the alignment channel set). See the diagram below.

After alignment, remember to replace the jumpers as they were.



I. PLL

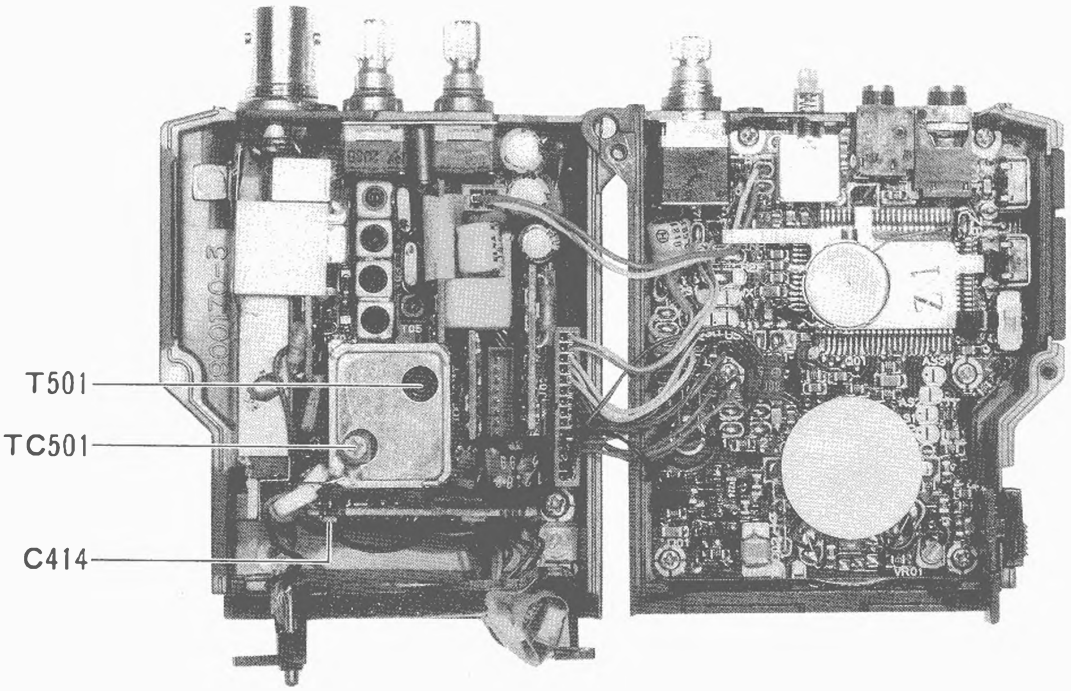
A. VCV (Varactor Control Voltage)

1. Connect the DC voltmeter between C414 on the PLL Unit and chassis ground.

2. Set the transceiver to channel 20, close the PTT switch and adjust transformer T501 on the VCO Unit for 1.5 ±0.1V on the voltmeter. Release the PTT switch.

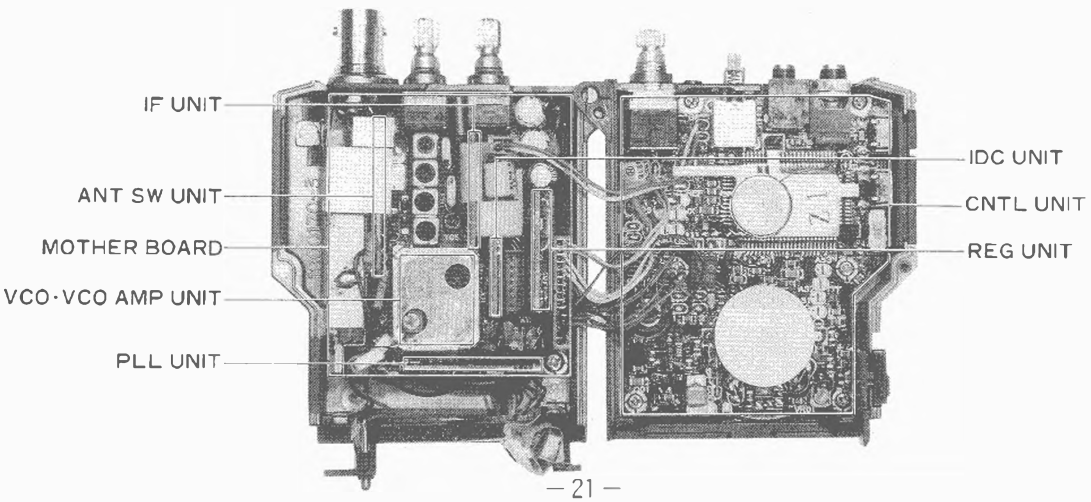
3. Set the transceiver to channel 159 and adjust trimmer TC501 on the VCO Unit for 3.0 ±0.1V on the meter while receiving. Then close the PTT switch and confirm at least 2.0V on the meter.

4. Set the transceiver to the channel 122 and confirm at least 1.0V while receiving.



PLL SECTION ALIGNMENT POINTS

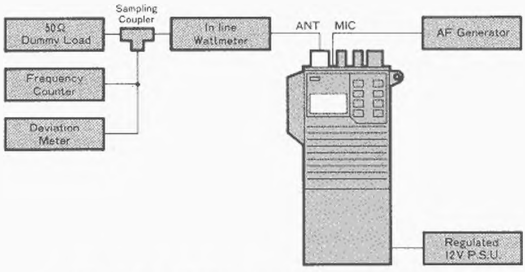
CIRCUIT BOARD (UNIT) LOCATIONS



ALIGNMENT

II. TRANSMITTER

Set up the test equipment as shown at the right.



TRANSMITTER ALGNMENT SETUP

A. Output Power

1. Set the transceiver to channel 89, and set the LOW power switch to the undepressed position.

2. Adjust TC201 on the Mother Board for peak output power on the wattmeter (at least 5W with less than 1.6A supply current).

3. Adjust VR204 on the Mother Board for 5.0W output.

4. Depress the LOW power switch and adjust VR101 on the Control Unit for 1.0 watts output.

5. Return the LOW power switch to the high (undepressed) position, and confirm 4.5 watts output or better on channels 120 and 159.

B. Operating Frequency

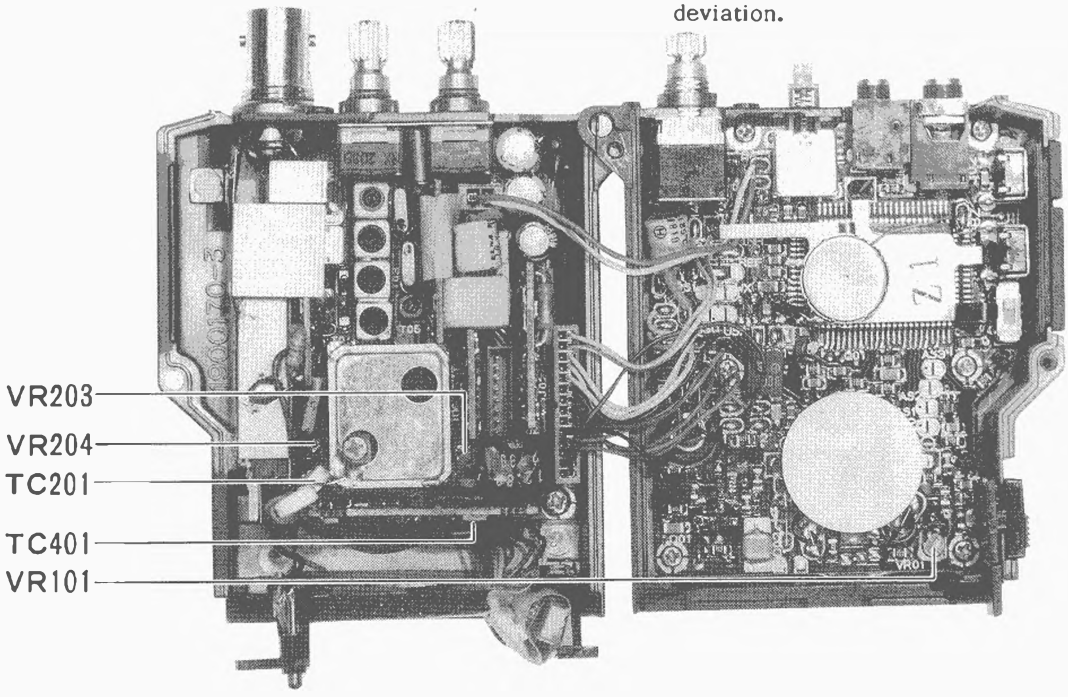
1. Set the transceiver to channel 120 and adjust TC401 on the PLL Unit, if necessary, so the frequency counter reads 155.5000 MHz ±100 Hz.

C. Modulation Level

1. Set the transceiver to channel 120, and set the AF generator for 25mV injection at 1 kHz.

2. Press the PTT switch and adjust VR203 on the Mother Board for ±4.2 kHz deviation on the Deviation meter.

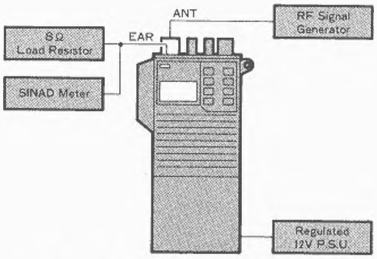
3. Reduce the AF generator level to 1.2mV (-56dBm) and confirm at least ±3.0 kHz deviation.



TRANSMITTER SECTION ALIGNMENT POINTS

III. RECEIVER

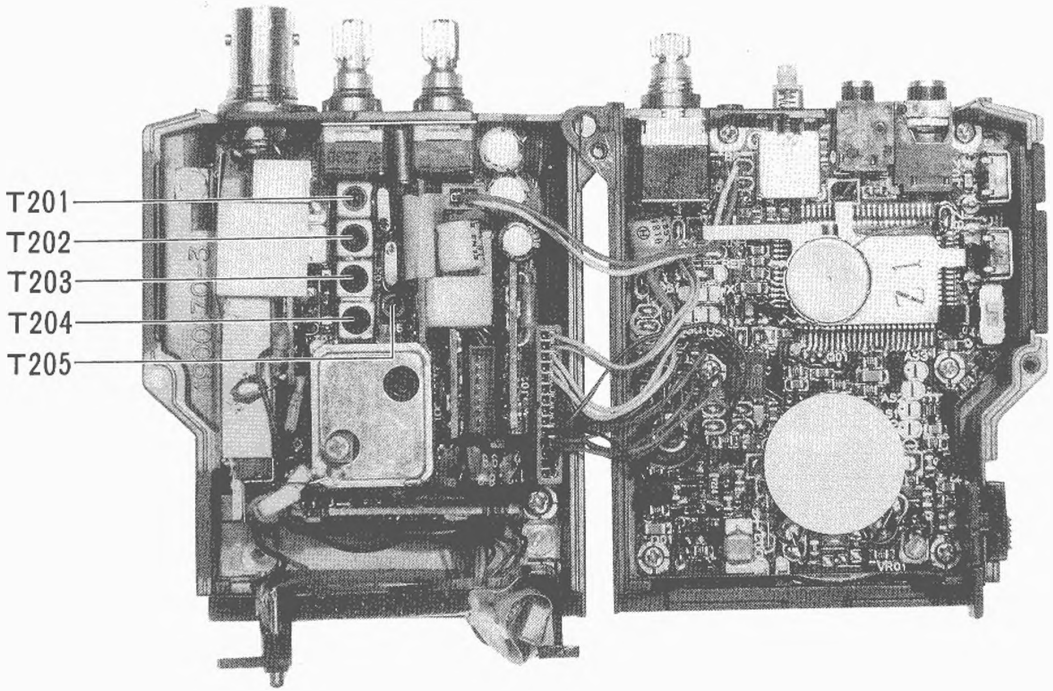
Assemble the test equipment as shown at the right.



RECEIVER ALIGNMENT SETUP

A. Sensitivity

1. Set the transceiver to channel 120, and the RF generator to 160.100 MHz.
2. Set the RF generator output level to 40dBu with ±3.5 kHz deviation of a 1 kHz modulating tone.
3. Adjust T201 - T205 on the Mother Board for minimum deflection on the deviation meter (less than -4dBu).
4. Confirm a 12dB SINAD of -4dB or better on channels 122 and 159.



RECEIVER SECTION ALIGNMENT POINTS

*** MAIN CHASSIS ***					
R1	J00215223	Carbon Film Res.	22k Ohm	1/8W	
C1	K10176102	Ceramic Cap.	0.001uF	50V	B
L1	L0021869	Toroidal Coil			
L2	L0021870	Toroidal Coil			
J1	P1090623	Connector	BNC-RM-1		
	R3511930	Top Panel			
	R4900201	Front Panel			
	R4900172	Rear Panel			
	R7124620	Speaker Cloth			
	R7124630	Microphone Cloth			
	R3508300	Rubber Molding (PTT)			
	R3803650A	Rubber (Top Panel Gasket)			
	R3507960	Rubber (Ear & Mic Plug)			
	R3507930A	Window			
	R0126580	Shield Plate			
	R7120510	Fiber Insulator Board			
	R3116620	Knob (VOL & SQL)			
	R3116390	Knob (CH)			
	R7115630	Microphone Collar			
	R0125760	Shield Case Cover			
	R0116650B	Power Module Holder			
	R3508310	Battery Release Latch Button			
	R0117370	Coil Spring			
	R0508000B	Insulator Assy			
	R0507950B	Battery Mount Spring Plate			
	R7120350	Sheet			
	R0118930	Bevelled Spacer			
	R0118940	Bevelled Spacer			
	R7118670A	Sponge			
	R3511940	Push Button Cushion			
	R3511950	Rubber Knob Collar			
	R0119430	Belt Clip			

*** CONTROL UNIT ***			
	F2993101A	Printed Circuit Board	
	C0299310A	PCB with Components	
Q101	G1090907	IC	HD404608-A01FS
Q102	G3327127G	Transistor	2SC2712GR TE85R
Q103	G3111627G	Transistor	2SA1162GR TE85R
Q104	G1090812	IC	PST523C-2
Q105	G3111627G	Transistor	2SA1162GR TE85R
Q106	G3111627G	Transistor	2SA1162GR TE85R
Q107	G3070020	Transistor	HC1F3P-T2B
Q108	G3327127G	Transistor	2SC2712GR TE85R
D101	G2090334	Diode	HZ4ALL
D102	G2090118	Diode	1SS97

D103	G2070066	Diode	LT1EP53A		
D104	G2070003	Diode	1SS226 TE85R		
D105	G2070026	Diode	1SS196 TE85R		
D106	G2070068	Diode	FMN1-T99		
D107	G2070068	Diode	FMN1-T99		
D108	G2070068	Diode	FMN1-T99		
D109	G2070003	Diode	1SS226 TE85R		
D110	G2070001	Diode	1SS181 TE85R		
D113	G2070026	Diode	1SS196 TE85R		
DS101	G6090070	LCD	FTD-8836		
CO101	H7900430	Ceramic Osc.	CSB800D		
R101	J24205473	Chip Res.	47k Ohm	1/10W	
R102	J24205103	Chip Res.	10k Ohm	1/10W	
R103	J24205472	Chip Res.	4.7k Ohm	1/10W	
R104	J24205105	Chip Res.	1M Ohm	1/10W	
R105	J24205102	Chip Res.	1k Ohm	1/10W	
R106	J24205103	Chip Res.	10k Ohm	1/10W	
R107	J24205223	Chip Res.	22k Ohm	1/10W	
R108	J24205224	Chip Res.	220k Ohm	1/10W	
R109	J24205124	Chip Res.	120k Ohm	1/10W	
R110	J24205223	Chip Res.	22k Ohm	1/10W	
R111	J24205104	Chip Res.	100k Ohm	1/10W	
R112	J24205474	Chip Res.	470k Ohm	1/10W	
R113	J24205471	Chip Res.	470 Ohm	1/10W	
R114	J24205331	Chip Res.	330 Ohm	1/10W	
R115	J24205222	Chip Res.	2.2k Ohm	1/10W	
R116	J24205333	Chip Res.	33k Ohm	1/10W	
R117	J24205473	Chip Res.	47k Ohm	1/10W	
R118	J24205223	Chip Res.	22k Ohm	1/10W	
R119	J24205223	Chip Res.	22k Ohm	1/10W	
R120	J24205103	Chip Res.	10k Ohm	1/10W	
R121	J24205103	Chip Res.	10k Ohm	1/10W	
R122	J24205103	Chip Res.	10k Ohm	1/10W	
R123	J24205100	Chip Res.	10 Ohm	1/10W	
R124	J24205471	Chip Res.	470 Ohm	1/10W	
R125	J24205152	Chip Res.	1.5k Ohm	1/10W	
R126	J24205222	Chip Res.	2.2k Ohm	1/10W	
R127	J24205102	Chip Res.	1k Ohm	1/10W	
R128	J24205473	Chip Res.	47k Ohm	1/10W	
R129	J24205103	Chip Res.	10k Ohm	1/10W	
R130	J24205473	Chip Res.	47K Ohm	1/10W	
R131	J24205224	Chip Res.	220k Ohm	1/10W	
R132	J24205124	Chip Res.	120k Ohm	1/10W	
R133	J24205331	Chip Res.	330 Ohm	1/10W	
VR101	J51778103	Potentiometer	10k Ohm		
C101	K22170805	Chip Cap.	0.001uF	50V	B
C102	K22141809	Chip Cap.	0.1uF	25V	B
C103	K40089010	Al.Electro Cap.	220uF	6.3V	
C104	K22170805	Chip Cap.	0.001uF	50V	B
C105	K22170243	Chip Cap.	220pF	50V	CH
C106	K22170243	Chip Cap.	220pF	50V	CH
C108	K22141809	Chip Cap.	0.1uF	25V	B
C109	K22170817	Chip Cap.	0.01uF	50V	B

C110	K78160027	Tantalum Chip Cap.	0.22uF	35V	
C112	K78080013	Tantalum Chip Cap.	47uF	6.3V	
C113	K22170805	Chip Cap.	0.001uF	50V	B
C114	K22141809	Chip Cap.	0.1uF	25V	B
C115	K22170817	Chip Cap.	0.01uF	50V	B
C116	K22170817	Chip Cap.	0.01uF	50V	B
C117	K22170805	Chip Cap.	0.001uF	50V	B
C118	K78120009	Tantalum Chip Cap.	1uF	16V	
C119	K22170805	Chip Cap.	0.001uF	50V	B
C120	K22170805	Chip Cap.	0.001uF	50V	B
C121	K22170805	Chip Cap.	0.001uF	50V	B
C122	K22141809	Chip Cap.	0.1uF	25V	B
C123	K22170805	Chip Cap.	0.001uF	50V	B
C124	K78120017	Tantalum Chip Cap.	4.7uF	6.3V	
C125	K22170805	Chip Cap.	0.001uF	50V	B
C126	K22170805	Chip Cap.	0.001uF	50V	B
C127	K78080003	Tantalum Chip Cap.	10uF	6.3V	
C128	K10176102	Ceramic Cap.	0.001uF	50V	B
C129	K22170805	Chip Cap.	0.001uF	50V	B
C130	K22170805	Chip Cap.	0.001uF	50V	B
C131	K22170805	Chip Cap.	0.001uF	50V	B
C132	K22170805	Chip Cap.	0.001uF	50V	B
C133	K22170817	Chip Cap.	0.01uF	50V	B
C134	K22170817	Chip Cap.	0.01uF	50V	B
C135	K22170817	Chip Cap.	0.01uF	50V	B
BZ101	M4290005A	Buzzer	EFB-RE-25D07		
SP101	M4090063	Loudspeaker	0.2W 7.2 Ohm		
MIC101	M3290008	Microphone	EM-78CYE		
S101	N5090018	TACT Switch (Lamp)	KHH15951		
S102	N0190139	Rotary Switch (CH)	SRBM1L066		
	R6054387B	Nut for S102			
S103	N5090018	TACT Switch (PTT)	KHH15951		
S104	N6090057	Slide Switch (Write)	SSSS22		
S105	N4090088	Push Switch (Power)	SPJ622NO9		
J101	P1090369	Connector (Ext Mic)	HSJ0838-01-010		
J102	P1090370	Connector (Ear)	HSJ0836-01-010		
P101	T9205748	Wire Assy			
P102	T9205707	Wire Assy			
BT101	Q9000366	Lithium Battery	CR2025-T02		
PL101	Q1000060	Lamp	T-3/4	6V 40mA	
	S6000142	Diffusor			
	S2000104	Rubber Conductor			
	R0117920B	Shield Case			

*** MOTHER BOARD UNIT ***

F2993102A Printed Circuit Board

C02993AA PCB with Components

Q201	G3803027Y	FET	2SK302Y TE85R
Q202	G4801517G	FET	3SK151GR TE85R
Q203	G3801607F	FET	2SK160-T2B
Q204	G1090874	IC	LA4147
Q205	G3070013	Transistor	FA1L4-T2B
Q206	G3333567D	Transistor	2SC3356-T2B
Q207	G3333577	Transistor	2SC3357-T2
Q208	G1090768	IC	M57796H
D201	G2070035	Diode	1T32-T8
D202	G2070035	Diode	1T32-T8
D203	G2070035	Diode	1T32-T8
D204	G2070035	Diode	1T32-T8
D205	G2070009	Diode	1SS184 TE85R
D206	G2070052	Diode	1SS193 TE85R
XF201	H1102137	Crystal Filter	21P15BU-1
CF201	H3900204	Ceramic Filter	LF-H15S
R201	J24205474	Chip Res.	470k Ohm 1/10W
R202	J24205104	Chip Res.	100k Ohm 1/10W
R203	J24205101	Chip Res.	100 Ohm 1/10W
R204	J24205100	Chip Res.	10 Ohm 1/10W
R205	J24205104	Chip Res.	100k Ohm 1/10W
R206	J24205104	Chip Res.	100k Ohm 1/10W
R207	J24205104	Chip Res.	100k Ohm 1/10W
R208	J24205332	Chip Res.	3.3k Ohm 1/10W
R209	J24205332	Chip Res.	3.3k Ohm 1/10W
R210	J24205221	Chip Res.	220 Ohm 1/10W
R211	J24205101	Chip Res.	100 Ohm 1/10W
R212	J24205472	Chip Res.	4.7k Ohm 1/10W
R214	J24205104	Chip Res.	100k Ohm 1/10W
R215	J24205104	Chip Res.	100k Ohm 1/10W
R216	J24205333	Chip Res.	3.3k Ohm 1/10W
R217	J24205122	Chip Res.	1.2k Ohm 1/10W
R218	J24205473	Chip Res.	47k Ohm 1/10W
R219	J24205221	Chip Res.	220 Ohm 1/10W
R220	J24205331	Chip Res.	330 Ohm 1/10W
R221	J24205102	Chip Res.	1k Ohm 1/10W
R222	J24205100	Chip Res.	10 Ohm 1/10W
R223	J24205100	Chip Res.	10 Ohm 1/10W
R224	J24205472	Chip Res.	4.7k Ohm 1/10W
R225	J24205392	Chip Res.	3.9k Ohm 1/10W
R226	J24205103	Chip Res.	10k Ohm 1/10W
R229	J24205000	Chip Res.	0 Ohm 1/10W
VR201	J60800132	Potentiometer	20k Ohm VOL A
	R6054387B	Nut for VR201 & 202	
VR202	J60800144	Potentiometer	20k Ohm SQL B
VR203	J51778333	Potentiometer	33k Ohm
VR204	J51778332	Potentiometer	3.3k Ohm

C201	K22170805	Chip Cap.	0.001uF	50V	B
C202	K22170215	Chip Cap.	15pF	50V	CH
C203	K22170202	Chip Cap.	1pF	50V	CH
C204	K22170817	Chip Cap.	0.01uF	50V	B
C205	K22170219	Chip Cap.	22pF	50V	CH
C206	K22170201	Chip Cap.	0.5pF	50V	CH
C207	K22170206	Chip Cap.	5pF	50V	CH
C208	K22170215	Chip Cap.	15pF	50V	CH
C209	K22170202	Chip Cap.	1pF	50V	CH
C210	K22170205	Chip Cap.	4pF	50V	CH
C211	K22170221	Chip Cap.	27pF	50V	CH
C212	K22170805	Chip Cap.	0.001uF	50V	B
C213	K22141809	Chip Cap.	0.1uF	25V	B
C214	K22170229	Chip Cap.	56pF	50V	CH
C215	K22170209	Chip Cap.	8pF	50V	CH
C216	K22170817	Chip Cap.	0.01uF	50V	B
C217	K22170805	Chip Cap.	0.001uF	50V	B
C218	K78120002	Tantalum Chip Cap.	2.2uF	16V	
C219	K78120002	Tantalum Chip Cap.	2.2uF	16V	
C220	K78160004	Tantalum Chip Cap.	0.33uF	35V	
C221	K22141809	Chip Cap.	0.1uF	25V	B
C222	K22170219	Chip Cap.	22pF	50V	CH
C223	K70127226	Tantalum Chip Cap.	22uF	16V	CH
C224	K40129038	Al Electro Cap.	100uF	16V	
C225	K22141809	Chip Cap.	0.1uF	25V	B
C226	K40129038	Al Electro Cap.	100uF	16V	
C227	K40089019	Al Electro Cap.	330uF	6.3V	
C228	K78120002	Tantalum Chip Cap.	2.2uF	16V	
C229	K22141809	Chip Cap.	0.1uF	25V	B
C230	K22141808	Chip Cap.	0.047uF	25V	B
C231	K22170805	Chip Cap.	0.001uF	50V	B
C232	K22170805	Chip Cap.	0.001uF	50V	B
C233	K22170221	Chip Cap.	27pF	50V	CH
C234	K22170805	Chip Cap.	0.001uF	50V	B
C235	K22170209	Chip Cap.	8pF	50V	CH
C236	K22170805	Chip Cap.	0.001uF	50V	B
C237	K22170805	Chip Cap.	0.001uF	50V	B
C238	K22170805	Chip Cap.	0.001uF	50V	B
C239	K22170805	Chip Cap.	0.001uF	50V	B
C240	K22170805	Chip Cap.	0.001uF	50V	B
C241	K40129038	Al Electro Cap.	100uF	16V	
C242	K22141809	Chip Cap.	0.1uF	25V	B
C243	K10176102	Ceramic Cap.	0.001uF	50V	B
C244	K78080003	Tantalum Chip Cap.	10uF	6.3V	
C245	K78160001	Tantalum Chip Cap.	0.1uF	35V	
C246	K22170817	Chip Cap.	0.01uF	50V	B
C247	K22170204	Chip Cap.	3pF	50V	CH
C248	K22170805	Chip Cap.	0.001uF	50V	B
C249	K22170805	Chip Cap.	0.001uF	50V	B
C250	K22170821	Chip Cap.	0.022uF	50V	B
C251	K22170805	Chip Cap.	0.001uF	50V	B
C252	K22170817	Chip Cap.	0.01uF	50V	B
C253	K22141809	Chip Cap.	0.1uF	25V	B
C254	K22170202	Chip Cap.	1pF	50V	CH
C256	K22170805	Chip Cap.	0.001uF	50V	B
C259	K22170817	Chip Cap.	0.01uF	50V	B
C260	K22170805	Chip Cap.	0.001uF	50V	B

C262	K22170219	Chip Cap.	22pF	50V	CH
C263	K10176102	Ceramic Cap.	0.001uF	50V	B
C264	K02172030	Ceramic Cap.	3pF	50V	CH
C265	K22170817	Chip Cap.	0.01uF	50V	B
C266	K22170805	Chip Cap.	0.001uF	50V	B
TC201	K91000169	Trimmer Cap.	20pF		
L201	L1690003	RFC	0.22uH		
L202	L1690009	RFC	68nH		
L203	L1020722	RFC			
L204	L1690020	RFC	0.47uH		
L205	L1690011	RFC	0.1uH		
T201	L0021887	Coil	145MHz		
T202	L0021697	Coil	150MHz		
T203	L0021697	Coil	150MHz		
T204	L0021697	Coil	150MHz		
T205	L0021867	Coil	21.6MHz		
J201	P0090609	Connector	SB20-02WS		
J202	P0090601	Connector	IL-Y-14PS15T2-EF		
P201	T9205673	Wire Assy			

*** IF UNIT ***

F2993103 Printed Circuit Board

C029933AA PCB with Components

Q301	G3326207B	Transistor	2SC2620QBTR		
Q302	G1090808	IC	TK10485M		
D301	G2070003	Diode	1SS226 TE85R		
X301	H0102774	Crystal	UM-1	22.055MHz	
CD301	H7900180	Ceramic Disc	CDB455C7		
R301	J24205000	Chip Res.	0 Ohm	1/10W	
R302	J24205152	Chip Res.	1.5k Ohm	1/10W	
R303	J24205224	Chip Res.	220k Ohm	1/10W	
R304	J24205473	Chip Res.	47k Ohm	1/10W	
R305	J24205471	Chip Res.	470 Ohm	1/10W	
R306	J24205271	Chip Res.	270 Ohm	1/10W	
R307	J24205470	Chip Res.	47 Ohm	1/10W	
R308	J24205102	Chip Res.	1k Ohm	1/10W	
R309	J24205222	Chip Res.	2.2k Ohm	1/10W	
R310	J24205102	Chip Res.	1k Ohm	1/10W	
R311	J24205474	Chip Res.	470k Ohm	1/10W	
R312	J24205223	Chip Res.	22k Ohm	1/10W	
R313	J24205122	Chip Res.	1.2k Ohm	1/10W	
R314	J24205682	Chip Res.	6.8k Ohm	1/10W	
R315	J24205472	Chip Res.	4.7k Ohm	1/10W	
C301	K22170817	Chip Cap.	0.01uF	50V	B
C302	K22170817	Chip Cap.	0.01uF	50V	B
C303	K22170229	Chip Cap.	56pF	50V	CH
C305	K22170237	Chip Cap.	120pF	50V	CH
C306	K22141809	Chip Cap.	0.1uF	25V	B
C307	K22141809	Chip Cap.	0.1uF	25V	B
C308	K22170233	Chip Cap.	82pF	50V	CH
C309	K78080004	Tantalum Chip Cap.	15uF	6.3V	
C310	K22170817	Chip Cap.	0.01uF	50V	B
C311	K22170805	Chip Cap.	0.001uF	50V	B
C312	K22170805	Chip Cap.	0.001uF	50V	B
C313	K22170805	Chip Cap.	0.001uF	50V	B
C314	K22141809	Chip Cap.	0.1uF	25V	B
C315	K78120013	Tantalum Chip Cap.	1uF	16V	
C316	K78120009	Tantalum Chip Cap.	1uF	16V	

*** PLL UNIT ***

F2993104 Printed Circuit Board

C0299334AA PCB with Components

Q401	G1090870	IC	uPB569G		
Q402	G1090582	IC	JLC1007TP		
Q403	G3416997Q	Transistor	2SD1699-T2B		
Q404	G3070005	Transistor	FN1A4M-T2B		
D401	G2070001	Diode	1SS181 TE85R		
X401	H0102799	Crystal	UM-2	12.800MHz	
R401	J24205000	Chip Res.	0 Ohm	1/10W	
R402	J24205223	Chip Res.	22k Ohm	1/10W	
R403	J24205220	Chip Res.	22 Ohm	1/10W	
R404	J24205103	Chip Res.	10k Ohm	1/10W	
R405	J24205103	Chip Res.	10k Ohm	1/10W	
R406	J24205103	Chip Res.	10k Ohm	1/10W	
R407	J24205102	Chip Res.	1k Ohm	1/10W	
R408	J24205000	Chip Res.	0 Ohm	1/10W	
R410	J24205153	Chip Res.	15k Ohm	1/10W	
R411	J24205103	Chip Res.	10k Ohm	1/10W	
R412	J24205222	Chip Res.	2.2k Ohm	1/10W	
R413	J24205103	Chip Res.	10k Ohm	1/10W	
R414	J24205472	Chip Res.	4.7k Ohm	1/10W	
C401	K22170206	Chip Cap.	5pF	50V	CH
C402	K22170805	Chip Cap.	0.001uF	50V	B
C403	K22170805	Chip Cap.	0.001uF	50V	B
C404	K22170805	Chip Cap.	0.001uF	50V	B
C405	K22170805	Chip Cap.	0.001uF	50V	B
C406	K22170235	Chip Cap.	100pF	50V	CH
C407	K22170235	Chip Cap.	100pF	50V	CH
C408	K22170235	Chip Cap.	100pF	50V	CH
C409	K22170227	Chip Cap.	47pF	50V	CH
C410	K22170221	Chip Cap.	27pF	50V	CH
C411	K78080002	Tantalum Chip Cap.	4.7uF	6.3V	
C412	K22170817	Chip Cap.	0.01uF	50V	B
C413	K22170817	Chip Cap.	0.01uF	50V	B
C414	K78160001	Tantalum Chip Cap.	0.1uF	35V	
C415	K78100003	Tantalum Chip Cap.	6.8uF	10V	
C416	K78160001	Tantalum Chip Cap.	0.1uF	35V	
C417	K78080002	Tantalum Chip Cap.	4.7uF	6.3V	
TC401	K91000166	Trimmer Cap.	30pF		
L401	L1190275	RFC	0.22uH		

*** VCO/VCO-AMP UNIT ***

F2993105	Printed Circuit Board	(VCO)	
F2993109	Printed Circuit Board	(Osc.Amp)	
C029935AA	PCB with Components	(VCO)	
C029939AA	PCB with Components	(Osc.Amp)	
C029935AB	PCB with Components	(VCO with Amp)	
Q501	G3070001	Transistor	FA1A4M-T2B
Q502	G3802387S	FET	2SK238 T2
Q503	G3327597G	Transistor	2SC2759-T2B
Q504	G3327127G	Transistor	2SC2712GR TE85R
Q505	G3333567G	Transistor	2SC3356-T2B
D501	G2090297	Diode	1SS110
D502	G2090271	Diode	1T33
D503	G2090271	Diode	1T33
R501	J24205332	Chip Res.	3.3k Ohm 1/10W
R502	J24205103	Chip Res.	10k Ohm 1/10W
R503	J24205224	Chip Res.	220k Ohm 1/10W
R504	J24205472	Chip Res.	4.7k Ohm 1/10W
R505	J24205222	Chip Res.	2.2k Ohm 1/10W
R506	J24205823	Chip Res.	82k Ohm 1/10W
R507	J24205470	Chip Res.	47 Ohm 1/10W
R508	J24205224	Chip Res.	220k Ohm 1/10W
R509	J24205471	Chip Res.	4.7k Ohm 1/10W
C501	K22170805	Chip Cap.	0.001uF 50V B
C502	K22170219	Chip Cap.	22pF 50V CH
C503	K22170805	Chip Cap.	0.001uF 50V B
C504	K22170809	Chip Cap.	0.001uF 50V B
C505	K22170805	Chip Cap.	0.001uF 50V B
C506	K22170817	Chip Cap.	0.01uF 50V B
C507	K22170243	Chip Cap.	220pF 50V CH
C508	K78080003	Tantalum Chip Cap.	4.7uF 6.3V
C509	K22170201	Chip Cap.	0.5pF 50V B
C510	K22170805	Chip Cap.	0.001uF 50V B
C511	K22170805	Chip Cap.	0.001uF 50V B
C512	K78080003	Tantalum Chip Cap.	10uF 6.3V
C513	K78080002	Tantalum Chip Cap.	4.7uF 6.3V
C514	K22170805	Chip Cap.	0.001uF 50V B
C515	K22170311	Chip Cap.	10pF 50V UJ
C516	K22170311	Chip Cap.	10pF 50V UJ
C517	K22170206	Chip Cap.	5pF 50V CH
TC501	K91000152	Trimmer Cap.	40pF
L501	L1190283	RFC	1uH
L502	L1190283	RFC	1uH
L503	L1190275	RFC	0.22uH
L504	L1190283	RFC	1uH
T501	L0021684A	Coil	R12-E991X 150MHz
J501	P0090668	Connector	IMSA-9210B-1-05-T
J502	P0090669	Connector	IMSA-9210B-1-07-T

*** REG UNIT ***

F2993106 Printed Circuit Board

C029936AA PCB with Components

Q601	G1090873	IC	M5236ML-T01-1	
Q602	G3207997L	Transistor	2SB799-T2B	
Q603	G3327127G	Transistor	2SC2712GR TE85R	
Q604	G3070013	Transistor	FA1L4M-T2B	
Q605	G3202610L	Transistor	2SB1261-L	
Q606	G3111627G	Transistor	2SA1162GR TE85R	
Q607	G3111627G	Transistor	2SA1162GR TE85R	
Q608	G3111627G	Transistor	2SA1162GR TE85R	
Q609	G3070013	Transistor	FA1L4M-T2B	
D601	G2070009	Diode	1SS184 TE85R	
D602	G2070050	Diode	02CZ8.2X TE85R	
D603	G2070009	Diode	1SS184 TE85R	
D604	G2070009	Diode	1SS184 TE85R	
D605	G2070009	Diode	1SS184 TE85R	
D606	G2070009	Diode	1SS184 TE85R	
R601	J01245829	Carbon Film Res.	8.2 Ohm	1/4W
R602	J24205101	Chip Res.	100 Ohm	1/10W
R603	J24205223	Chip Res.	22k Ohm	1/10W
R604	J24205472	Chip Res.	4.7k Ohm	1/10W
R605	J24205221	Chip Res.	220 Ohm	1/10W
R606	J24205471	Chip Res.	470 Ohm	1/10W
R607	J24205153	Chip Res.	15k Ohm	1/10W
R608	J24209006	Chip Res.(1%)	30.1k Ohm	1/10W
R609	J24209005	Chip Res.(1%)	10k Ohm	1/10W
R610	J24205222	Chip Res.	2.2k Ohm	1/10W
R611	J24205472	Chip Res.	4.7k Ohm	1/10W
R612	J24205222	Chip Res.	2.2k Ohm	1/10W
R613	J24205102	Chip Res.	1k Ohm	1/10W
R614	J24205103	Chip Res.	10k Ohm	1/10W
R615	J24205472	Chip Res.	4.7k Ohm	1/10W
C601	K78120002	Tantalum Chip Cap.	2.2uF	16V
C602	K22170805	Chip Cap.	0.001uF	50V B
C603	K22170805	Chip Cap.	0.001uF	50V B
C604	K78120009	Tantalum Chip Cap.	1uF	16V
C605	K22170805	Chip Cap.	0.001uF	50V B
C606	K22170805	Chip Cap.	0.001uF	50V B
C607	K78120009	Tantalum Chip Cap.	1uF	16V
C608	K22170805	Chip Cap.	0.001uF	50V B
C609	K78080003	Tantalum Chip Cap.	10uF	6.3V
C610	K22170805	Chip Cap.	0.001uF	50V B
C611	K22170805	Chip Cap.	0.001uF	50V B
C612	K22170805	Chip Cap.	0.001uF	50V B
C613	K22170805	Chip Cap.	0.001uF	50V B

*** IDC UNIT ***					
	F2993107	Printed Circuit Board			
	C029937AA	PCB with Components			
Q701	G1090603	IC	uPC324G		
D701	G2070003	Diode	1SS226 TE85R		
R701	J24205332	Chip Res.	3.3k Ohm	1/10W	
R702	J24205224	Chip Res.	220k Ohm	1/10W	
R703	J24205332	Chip Res.	3.3k Ohm	1/10W	
R704	J24205224	Chip Res.	220k Ohm	1/10W	
R705	J24205105	Chip Res.	1M Ohm	1/10W	
R706	J24205103	Chip Res.	10k Ohm	1/10W	
R707	J24205103	Chip Res.	10k Ohm	1/10W	
R708	J24205223	Chip Res.	22k Ohm	1/10W	
R709	J24205124	Chip Res.	120k Ohm	1/10W	
R710	J24205124	Chip Res.	120k Ohm	1/10W	
R711	J24205184	Chip Res.	180k Ohm	1/10W	
R712	J24205154	Chip Res.	150k Ohm	1/10W	
R713	J24209010	Chip Res.(1%)	110k Ohm	1/10W	
R714	J24205154	Chip Res.	150k Ohm	1/10W	
R715	J24209007	Chip Res.(1%)	61.9k Ohm	1/10W	
R716	J24209009	Chip Res.(1%)	100k Ohm	1/10W	
R717	J24205154	Chip Res.	150k Ohm	1/10W	
R718	J24209008	Chip Res.(1%)	68.1k Ohm	1/10W	
R719	J24205000	Chip Res.	0 Ohm	1/10W	
C701	K78120009	Tantalum Chip Cap.	1uF	16V	
C702	K78120009	Tantalum Chip Cap.	1uF	16V	
C703	K22170807	Chip Cap.	0.015uF	50V	B
C704	K22170817	Chip Cap.	0.01uF	50V	B
C705	K78120009	Tantalum Chip Cap.	1uF	16V	
C706	K22170809	Chip Cap.	0.0022uF	50V	B
C707	K22170805	Chip Cap.	0.001uF	50V	B
C708	K22170235	Chip Cap.	100pF	50V	CH
C709	K78120009	Tantalum Chip Cap.	1uF	16V	
C710	K78120009	Tantalum Chip Cap.	1uF	16V	
C711	K22170219	Chip Cap.	22pF	50V	CH

*** ANT SW UNIT ***

F2993106A Printed Circuit Board

C0299308AA PCB with Components

Q801	G3207997G	Transistor	2SB799-T2ML		
Q802	G3327127G	Transistor	2SC2712GR TE85R		
Q803	G3327127G	Transistor	2SC2712GR TE85R		
Q804	G3207997G	Transistor	2SB799-T2ML		
Q805	G3327127G	Transistor	2SC2712GR TE85R		
Q806	G3327127G	Transistor	2SC2712GR TE85R		
D801	G2090424	Diode	1SS237		
D802	G2090337	Diode	MI308		
D803	G2090426	Diode	1SV154		
D804	G2090426	Diode	1SV154		
R801	J24205472	Chip Res.	4.7k Ohm	1/10W	
R802	J24205221	Chip Res.	220 Ohm	1/10W	
R803	J24205152	Chip Res.	1.5k Ohm	1/10W	
R804	J24205472	Chip Res.	4.7k Ohm	1/10W	
R805	J24205222	Chip Res.	2.2k Ohm	1/10W	
R806	J24205222	Chip Res.	2.2k Ohm	1/10W	
R807	J24205332	Chip Res.	3.3k Ohm	1/10W	
R808	J24205332	Chip Res.	3.3k Ohm	1/10W	
R809	J24205220	Chip Res.	22 Ohm	1/10W	
R810	J24205331	Chip Res.	330 Ohm	1/10W	
C801	K22170805	Chip Cap.	0.001uF	50V	B
C802	K40129052	Al Electro Cap.	10uF	16V	
C803	K22170805	Chip Cap.	0.001uF	50V	B
C804	K40129052	Al Electro Cap.	10uF	16V	
C805	K22170805	Chip Cap.	0.001uF	50V	B
C806	K22170805	Chip Cap.	0.001uF	50V	B
C807	K22170805	Chip Cap.	0.001uF	50V	B
C808	K22170805	Chip Cap.	0.001uF	50V	B
C809	K22170207	Chip Cap.	6pF	50V	CH
C810	K22170213	Chip Cap.	12pF	50V	CH
C811	K22170805	Chip Cap.	0.001uF	50V	B
C812	K22170213	Chip Cap.	12pF	50V	CH
C813	K22170211	Chip Cap.	10pF	50V	CH
C814	K22170217	Chip Cap.	18pF	50V	CH
C815	K22170211	Chip Cap.	10pF	50V	CH
C816	K22170213	Chip Cap.	12pF	50V	CH
C817	K22170229	Chip Cap.	56pF	50V	CH
C818	K22170229	Chip Cap.	56pF	50V	CH
C819	K22170219	Chip Cap.	22pF	50V	CH
C820	K22170213	Chip Cap.	12pF	50V	CH
C821	K22170805	Chip Cap.	0.001uF	50V	B
L801	L1190279	RFC	0.47uH		
L802	L0021765	Coil			
L803	L0021765	Coil			
L804	L0021894	Coil			
L805	L0020340	Coil			
L806	L0020340	Coil			